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THE

EDINBURGH

MEDICAL JOURNAL.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Illusions of the Senses.*[1] By ROBERT PATERSON, M.D., F.R.C.P.E., F.A.S.S., etc., etc.

Introduction.—Illusions of the senses may *in general terms* be described as false impressions having their origin in the brain, and referred to the different organs of sense.

These impressions are often very distinct and accurate, exceeding in outline and form the most vivid dream, and are seen, felt, or heard, with so many of the circumstances of reality about them, as to give a temporary belief in their existence.

Individuals unacquainted with phenomena of this kind, and to whom they occur for the first time, put them down to one of two sources; to some derangement of the mind, or to supernatural agency. But as such phenomena are of frequent occurrence, startling even to those acquainted with them, it becomes of the greatest importance, in the interests of science, to investigate the causes of such, to explain if possible how they occur, to show by what means they are produced, to tell of the pathological conditions most liable to give rise to them, and to describe the tests to be applied to distinguish illusions from realities.

There can be little doubt that the general impression to which appearances of this kind give rise, had reference to the idea that the spirits of the departed hovered round the living. This idea or belief had its origin in that sublime hope of immortality which has its foundation in the highest and profoundest instincts of the human mind, and which may be called the chief solace and greatest triumph of man's reason. Tribes have been found who had no idea of a Creator, but no people, however rude or debased, have yet been met with who did not anticipate a future state. "Some more or less defined idea of a retributive future," says Dr Wilson, "is found in the wildest savage creed, developing itself in the rude virtue to which the barbarian aspires. While the luxurious Asiatic dreams of the sensual joys of his Mohammedan elysium, the Red Indian warrior looks forward to the range of ampler hunting grounds, and the enjoyment of unfailing victory in the war path."[1] The Esquimaux[2] and the Arab—the one inhabiting the extreme north, and clothed to suit his icy dwelling; the other, oppressed with the burning sun reflected from Arabian sands—alike breathe the sweet influence of a belief in the immortality of the soul, and people space with the spirits of their departed relatives and friends.

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[1] The abstract of a Lecture delivered before the Royal College of Surgeons of Edinburgh, at a Conversazione held in their College Hall, on the evening of 13th March 1867.

All the anticipations, however, of savage nations are of tangible joys; and, to the simple mind of the untutored savage, affection dictates the provision of means, to supply the first requisites of this state of being.

The burial practices of all nations throw much light on their belief in a future state. This may especially be remarked of the nations of antiquity, whose written records throw little light on this point.

That the habits, duties, and social distinctions of earth would be perpetuated in a future state, was, and is the crude conception of the unlettered mind. Accordingly, the bow and spear,[3] and other implements of the chase, have been very commonly found interred with the bodies of the early hunters. The sword and shield, laid beside the cinerary urn, told of a similar purpose. So we find that many nations also interred with their dead the food which was to serve them in their journey to the other world. The Chinese continue to do so to the present day, putting tea and sweetmeats into the coffin with the departed. The ancient Peruvians did the same; the Siamese also. But it was not only the weapons of the chase and of war which they were to use in another world, or the food which was to serve them on the journey, but wives, concubines, and children, slaves and domestic pets, were often cruelly interred alive with their dead master, for the purpose of being with him and assisting him in the world of spirits. In India, to this day, pitchers full of water are hung upon the trees adjacent to a grave or place of sepulture, for satisfying the supposed thirst of the dead; and in Etruria, Sir W. Hamilton refers to a similar custom having existed in the burial of their dead.

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[1] Wilson's Prehistoric Annals, p. 42.

[2] The Esquimaux have a straightforward account of a future state in which all believe and none vary. "The souls in their happy state inhabit a land beyond the mountains where eternal summer prevails, the sun never sets, ice and snow are unknown, and the fish and whales are plenty for those who wish to catch them."—Lyon's Private Journal, pp. 373–4.

[3] The Esquimaux place the weapons of the chase and useful utensils near the graves of the departed, so that they may be used in the other world. (Lyon's Private Journal, p. 374.) Many early British cysts exhibit the same thing. In Guinea (Picard, p. 791; Madden's Shrines, vol. i. p. 280), when the king or any principal person dies, they murder women, maids, boys, and slaves, to accompany the deceased in his journey to the other world. The bodies of these his new attendants are buried with him, and their heads are stuck upon poles all around his mausoleum at Loango. The decease of a grandee is characterized by much more extravagance than occurs in most other nations. They inter the dead with valuable effects, foreign commodities, domestics, and several young ladies for his amusement in his journey to the other world, and who are buried alive with him.

The ancient Greeks, in laying out their dead, always placed an obolus or Greek coin in the mouth to pay Charon's fare across the rivers Styx and Acheron, and a cake made of flour and honey to appease Cerberus.

The Romans bore their dead with much lamentation to the funeral pile, on which, after being lighted, they cast the robes and arms of the deceased, as well as the slaughtered bodies of his favourite animals.[1]

The Laplanders believe, that the soul of the departed hovers around his corpse; and when they inter him in the woods, they always place a flint and steel beside him, so that he may strike a light to guide him through the thick forests, till he reaches the other world.[2]

The practices of the early nations of antiquity, as stated by the prophet Ezekiel, and corroborated by Herodotus,[3] who lived but a short time afterwards, in the interment of their dead warriors and kings, are strangely coincident with the practices which still exist among the Indian tribes in the burial of their chiefs, especially as described by Dr Daniel Wilson;[1] but all bear an unmistakable interpretation, and that is, the belief in a future state, where the chief or king is to enjoy in another world the luxuries and pomp which he had left on earth.

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[1] Madden's Sepulchres, vol. i. p. 457.

[2] *Ibid.*, vol. i. p. 362; also Picard.

[3] In the thirty-second chapter of Ezekiel are some remarkable verses illustrative of the practice of barrow burial in the times of the prophet and of Herodotus. The people of whom Ezekiel speaks are supposed to have been situated to the northward of the Euxine and Caspian Seas; and Herodotus describes the barrow burial of the Scythians in similar terms, which are thoroughly explanatory of the passages in Ezekiel: When one of the kings died, his corpse, embalmed and covered with wax, was conveyed in a chariot in solemn state to the place of sepulture: a large quadrangular pit was dug; in this they placed the royal corpse on a mattress of straw; on each side of this they planted spears, and covered it with wood, and roofed it over with hurdles of willow. In the remaining part of the pit they interred one of the late king's women, strangled for the purpose, together with his cupbearer, his cook, his groom, his minister, his courier, his horses, as well as some articles of every kind—including several goblets of gold—that he might be supposed to need in his journey to the other world. This done, the people eagerly contended with each other in the work of heaping over the whole a mound of earth as vast as possible. The proceedings did not here terminate; for, the year following, fifty of the late king's confidential attendants and fifty of his horses were slain, and placed, the men on the horses, around his sepulchre.—(Melp., 71, 2.)

If we trace, then, the universal belief in the immortality of the soul, from the simple savage who inters his friend with his hunting implements beside him; or the early warrior who was buried with his broken sword, to mark that his warfare was finished, and that in another world his sword would not be required; or the Roman with his slaves; or the Chinese with their tea and food; or the Red Indian with his horse, hunting-dogs, and favourite servants,[2] all point to an innate belief in futurity, which has been implanted in the breasts of mankind by the Creator of the universe.

I have thus dwelt on the very general, I may almost say universal belief in the existence of a spiritual element which leaves the body at death, and I have done so for the purpose of pointing out that it was necessarily the first link in the chain which led to a belief in spiritual appearances. The mind of man during intense grief, or great mental suffering, can readily, under certain circumstances, as we shall afterwards see, call up an image or illusion from his deep contemplation,—a mental picture, in fact, of the object on which his thoughts have been intensely fixed. This is natural to the human being, and must have existed in all ages, but when science could not explain it, it was believed to be a real representation. The belief in apparitions then was soon followed by the practice of showing them, and this became a trade in the temples of the nations of antiquity. Sir David Brewster has pointed out many methods, known to mechanical philosophers, by which appearances of this kind might have been produced. But it appears to me that with our present knowledge of illusions of the senses, we can readily follow the production of apparitions at the will of the magician or sorcerer, without the necessity of introducing any mechanical or optical contrivances at all. Man's own intensely excited nature through his organs of sense could produce apparitions without the magician or sorcerer, and if he did apply for an exhibition of this kind at the hands of such a one, it would require little but a dim light, some monotonous sound and a grey back-ground to exhibit before the bodily eye the mental picture which had haunted his imagination. Such appearances under such circumstances are known to be readily produced at the present day, from causes which I will shortly have to explain, and I can see no difficulty in believing that they were produced in ancient times under similar circumstances, at the supposed will of the sorcerer, and with the very trifling assistance of a few simple accessories. In no other way can the frequent and complete failure of sorcerers and magicians, to produce an apparition when desired, be accounted for than this, for if they were in the habit of trusting to optical or mechanical contrivances, mirrors or lenses, or magic lantern representations, they ought always to have succeeded well or indifferently; but when we are told that the priests or magicians often failed to produce any appearance at all, it seems to me more probable that the failure arose from the want of the necessary amount of intensity in the grief or emotion of the individual seeking the appearance than from any other cause.

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[1] A chief called *Black Bird*, when dying, called his warriors around him, and, like Jacob of old, gave commands concerning his burial, which were as literally fulfilled. The dead warrior was dressed in his most sumptuous robes, fully equipped, with his scalps and his war-eagles' plumes, and borne to a neighbouring height which commanded a magnificent extent of landscape. To the summit of this bluff, on the Missouri, a beautiful white steed—the favourite war-horse of Black Bird—was led, and there, in presence of the whole nation, the dead chief was placed with great ceremony on its back, looking towards the river, where, as he had said, he could see the canoes of the white men as they traversed the waters of the Missouri; his bow was placed in his hand; his shield and quiver, with his pipe and medicine-bag, hung by his side; his store of pemmican and his well-filled tobacco-pouch were supplied to sustain him on the long journey to the hunting-grounds of the Great Manitou, where the spirits of his fathers awaited his coming. After various other ceremonies, the Indians gathered turfs and soil, and placed them around the feet and legs of the horse. Gradually the pile rose under the combined labour of many willing hands, until the living steed and its dead rider were buried together under the memorial mound.—(Wilson, p. 356.)

[2] The Assemites of Tartary bury their dead, and always put provisions along with them; and when the king dies, he is buried with his valuable effects, a large store of provisions, and his darling idol; his wives or concubines and his prime minister poison themselves, to show their love and loyalty, and be enabled to wait on him in another world; besides, twelve camels, six horses and elephants, and several hunting-dogs, are likewise buried alive along with him. —(Madden, vol. i. p. 316.) In Ashantee, at the death of any principal person, they always sacrifice slaves or young girls, to be buried with them and attend them in another world.—(Madden, vol. i. p. 275.)

For the earliest notices of those occult sciences which have become known to us, through the channels of Greek and Roman literature, we must turn to the records of such monarchies as Chaldea, Assyria, Persia, and Egypt.

Prometheus, according to Servius, and Æsch. Prom. Vinct., 492, instructed the Assyrians in astrology; and the Assyrians are generally regarded, in classical antiquity, as the great masters and authors of the occult sciences. As Assyria was among the countries which were first peopled, it is remarkable that the first instances supposed to be mentioned in Scripture of the art of divination respects the images of Laban who was a native of Padan-Aram, a district bordering on that country.

The histories of Greece and Rome afford us sufficient information as to the points in question. Rollin tells us that, about the beginning of the Christian era, the practice of consulting oracles and the giving of responses was general, but that the responses were characterized as ambiguous, obscure, and convertible, so that one answer would agree with various and sometimes opposite events.

At this time, we are told the Magicians were always prepared to convince the sceptical by apparitions of the dead. It is recorded by Pliny, that in an ancient temple of Hercules, at Tyre, there was a consecrated seat from which the gods or apparitions arose. At Aornos, in Thesprotia, there was also a celebrated oracle which is said to have delivered its responses by calling up the dead. Homer informs us, in the eleventh book of the Odyssey, that Ulysses, wishful to see his friends who had been long separated from him by death, went alone into a temple of this kind. He saw his friends, but a multitude of other apparitions and a terrific noise prevented any conversation. We are also told that the faithful wife of Protesilaus importuned the gods to grant her but for a moment to behold her husband, who had fallen on the shores of Troy; she no sooner saw his spirit than she endeavoured to follow him, and precipitating herself into the flames was destroyed.

From the East the visionary scenes of divination and incantation passed into Europe. The imaginative character of the Greeks easily procured it their welcome and respect. No nation ever attained greater celebrity for its arts of divination than Etruria; and although it was manifestly derived from the East, they pretended that they were the authors of this science, or at least its first recipients from the gods. The means by which they obtained this mysterious knowledge is thus stated. An Etrurian ploughman, happening to drive his share somewhat deeper than usual, was surprised by the sudden appearance of a boy from beneath the ground. This worthy rustic alarmed the neighbours, and all Etruria flocked to see this subterranean stranger, who was no other than a god, named Tages, and who taught the doctrines of divination, which were committed to writing. Cicero ridiculed the story (De Div. ii. 23), but the belief in the origin of divination in Etruria was general at Rome, where diviners from that country were in the highest estimation, and youths of the first Roman families were sent to Etruria, to learn this art on its native ground.

With the advent of Christianity, a better, more consistent, and purer faith supplanted the imagery and worship of the Pagan gods. It will be remarked that Rome at this time had reached its culminating point of idolatry. The gods were so numerous, and the votaries in the temples so great, that the Pantheon could not contain more; and although the Roman Empire was still in its glory, revelling in the magnificence of its temples, the number of its votaries, and the value of their offerings, no sooner did the obscure birth occur, which marked the advent of the Christian era, than the Roman Empire underwent a change; and half a century had not elapsed before Rome, which the census of twenty years before had declared to contain 2,000,000 inhabitants, was burned to the ground by the orders of Nero, the crime being charged against the Christians. Then follow the sad and lamentable persecutions of this sect, the rebuilding of temples, the occurrence of plagues, and the Imperial city attacked by savage hordes from all sides, till at last the Pagan creed was supplanted by Constantine the Great, who, in consequence of a vision, placed the Cross on his banners, began to favour the Christians, and, finally, ordered all the heathen temples to be destroyed. This happened in the year 330 of our era; and since then the worship of the Pagan gods, and the showing of apparitions to those who sought them as votaries in the temples, for ever ceased.

The destruction of the heathen temples, the downthrow of the Pagan faith, together with the increase and propagation of the purer doctrines of Christianity, did much to extinguish the general belief in the procuring of apparitions; but an evil, which had so long held captive the human race, was not at once to be dispelled, and we find that it lingered on in all countries and took the form of superstition; and it is somewhat curious to trace the difference in the characters and forms of the supernatural agents in different countries, and to observe how generally they are in accordance with the characteristics of the country and national peculiarities of the people. To illustrate this point would lead me away from the object of this communication, but it, nevertheless, would be a matter of easy demonstration. In this country, superstition took a mixed nature, being moulded out of the practices of the Celts, the Scythians, and Teutonians.

During the Middle Ages, magic, sorcery, and divination reached an extreme pitch, and historical data tell us of no less than thirty-one varieties of these dark arts, which were not only believed in, but followed by all classes of society. There was necromancy, gastromancy, onomancy, oomancy, axinomancy, etc., and pyromancy or divination from images seen in the fire. We have all been familiar as children with the general appearance and divinitive effects of images seen in the fire; and if we are to judge of the others by the one under consideration, it would be difficult to contemplate anything which did not yield phenomena as much to be relied on as the images of pyromancy. The belief in witchcraft, or witch mania, as it has been improperly called, was but one of the phases of magic, sorcery, and incantation, so prominently popular during the darkness of the Middle Ages. In fact, the one gradually glided into the other and took its place. They had both a similar origin in the belief that disembodied spirits may be permitted to revisit this world, and that devils and demons or the spirits of evil were allowed to interfere in the affairs of mortals. Such ideas were practically applied to the living about the beginning of the sixteenth century, for at that time, in many countries of Europe and in our own, individuals were suspected of witchcraft on the most trifling foundation.

In fact, an epidemic terror seized upon the nations, no man thought himself secure either in his person or possessions from the machinations of the devil and his agents; every calamity that befel him, he attributed to a witch. If a storm arose and blew down his dwelling, it was witchcraft; if his cattle died of a murrain, if disease fastened upon his lambs, or death entered suddenly and snatched a beloved face from the hearth; these were not considered as the visitations of Providence, but were ascribed to the work of some neighbouring hag, whose wretchedness or peculiarities had attracted the attention of the superstitious, and put her down as a witch.

These suspected persons were committed to prison, fed on bad diet, and reduced to a condition of wretchedness in which death was welcomed as a relief from degradation. Be it remembered, too, that no one escaped this foul suspicion,—man and woman, young and old, the beautiful and the ugly, the rich and the poor, for examples are to be found in all, but it was especially the poor, infirm, and ignorant that suffered, and the records of the period show that few were convicted unless on their own confession, and that that confession was generally wrung from them by the most cruel torture; many, indeed, denied their confession the moment they were relieved from the torture. In this way matters proceeded for nearly two centuries. The crime, although extracted from their own lips under torture, and devoid of all other proof, was met by the severest penalties. In Germany, and most continental countries, they were burned at the stake; but in Scotland, the usual sentence was, to be strangled, and the body afterwards to be burned.

The extent to which this dreadful sacrifice of human life reached, for a supposed crime, may be estimated from the fact that in many cities of Germany there annually perished for this crime alone more than six hundred individuals, amounting to two daily, Sundays excepted. But in other countries the same massacre of innocent people was going on; in Italy, France, and Great Britain, the number of victims were great, although no approximation of the numbers has been ventured upon.

In the criminal trials of Scotland at this period, Mr Pitcairn has gathered upwards of seventy, in most of which sentence of death was pronounced and executed. Hume, in his History, tells us "that in a village, near Berwick, which contained only fourteen houses, fourteen persons were punished by fire."[1]

In the year 1589, fourteen persons were condemned to death for witchcraft in France. They appealed to the Parliament of Paris. The Parliament named the King's surgeon, Pegray, and three physicians, to visit the witches, and report. "We found them," says Pierre Pegray,[2] "to be very poor, stupid people, and some of them insane. Many of them were quite indifferent about life, and one or two of them desired death as a relief from their sufferings. Our opinion was, that they stood more in need of medicine than of punishment, and so we reported to the Parliament. The Parliament ordered the poor creatures to be sent to their homes, without inflicting any punishment upon them." Such views began to show themselves elsewhere. We find the Lord Advocate for Scotland, in his work on Criminal Law,[1] published in 1678, expressing himself thus:—"That he was convinced that three-fourths of the prosecutions for witchcraft were unjust and unfounded, that the persons who were accused of such crimes were poor ignorant men and women, who did not understand the nature of the accusation, and who mistook their own superstitious fears for witchcraft. One poor wretch, a weaver, believed he was a warlock, and upon being asked why, he replied, because he had seen the devil dancing round the candle like a fly. Another poor woman, who was said to be a witch, did not deny it, but asked the judge if a person might be a witch and not know it. I know," says Sir George Mackenzie, "that the tortures to which these poor creatures were submitted was the ground of all their confessions; and albeit, these poor miscreants cannot prove this usage, the actors in it being the only witnesses, yet the judge should be jealous of it, as that which at first did elicit the confession, and from fear of which they dare not retract it." As an illustration of this, I may mention the case of a poor woman, who was condemned, and upon being carried forth to the place of execution, listened to the prayers which were being offered up for her without uttering a word, but upon perceiving that there remained nothing more for her than to go forward to the stake, she rose up, and with a loud voice addressed the assembly,—"All you that see me this day know that I am now to die as a witch by my own confession, and I free all, more especially the ministers and elders, from the guilt of my blood." "And as I must make answer to the God of Heaven presently, I declare I am as free of witchcraft as any child; but being delated by a malicious woman, and put in prison under the name of a witch, disowned by my husband and friends, and seeing no ground of hope of ever coming out again, I made up that confession to destroy my own life, being weary of it, and choosing rather to die than to live."

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[1] Hume, vol. vii. p. 186. Lond. 1792.

[2] Pegray's Surgery, book vii. chap. 10.

Pitcairn, in speaking of the remarkable trial of Bessie Dunlop in the year 1576, says, "She was certainly the dupe of her own overheated imagination, already well stored with such fancies."[2]

I have probably dwelt too largely on this painful subject,—on this superstition which infected all classes of society for nearly two centuries, and in nearly all countries, and may almost be said to have been universal. My object in doing so has been to show that the absurd confessions of these individuals could have had no existence but in their own imaginations; they told of having seen, heard, and felt beings which we know at the present day could have had no existence. Many of the confessions of what they had seen and heard were denied afterwards. But there can be no doubt that illusions of the senses, under excitement, superstitious fear, and dread of punishment, could, in weak minds stored with the numerous myths of the middle ages, speedily produce illusions of great intensity, and of many of the senses combined, so that, without the means of correcting or of recognising such, they must have been more than human to have disbelieved them. To illusions of the senses, then, must be referred the whole category of those superstitious notions which led to so much cruelty and bloodshed. It will be my province to record to you cases this evening which, if they had occurred in ruder times, would have been put down to sorcery or witchcraft, but which, in our day, are rationally explained by illusions of the senses.

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[1] Mackenzie on Criminal Law.

[2] Pitcairn's Criminal Trials, vol. i. p. 49.

In further illustrating this subject, and which I shall, as far as possible, do from original cases, I shall direct your attention—

I. To illusions of the senses, and the manner of testing them.

II. To illusions of the senses, as they are to be distinguished from the delusions of the insane, on the one hand, and vivid dreams on the other.

III. To illusions of the senses having their origin,—1*st*, in the brain; 2*d*, in the structures of the eye; and, 3*d*, in external impressions made during certain states of mental excitement.

IV. To the pathology of illusions.

I. *Illusions of the Senses, and the Manner of Testing them.*

"Illusions of the senses" are the ideas or recollected images of the mind referred to the respective nervous expansions of the organs of sense, to the retina of the eye, to the olfactory membrane, to the cochlea of the ear, or to the skin on different parts of the body. It is easy to demonstrate how an illusion of any of the senses can be produced, to trace the steps by which former impressions can be revived or recalled, or to show how an idea or new image of the brain can, under certain states of the bodily organs, be imprinted like a reality on the organs of sense. Thus, if one looks steadfastly on the sun or the image of the sun in a looking-glass, and then turns the eye to a dark corner of the room, the retina for a moment will retain the impression of the sun, but will almost immediately be succeeded by the spectral image of it. The same experiment exemplifies the recall of images. Thus, Sir Isaac Newton, in the course of his experiments on this subject, became so haunted with the image of the sun, that when he was in shade, twilight, or darkness, he had but to think of the sun when it immediately appeared before his eyes. "From recalling images by an act of memory," says Dr Ferriar, "the transition is direct to beholding spectral objects which have been floating in the imagination;" and Sir David Brewster has shown, that not only are the ideas or images of the mind seen, heard, and touched, but that the nervous expansions of these different organs of sense are the common tablets on which all are respectively depicted, and by means of which they received their fancied existence.

It is known that blind persons have revived impressions in their mind's eye as bright and distinct as they ever saw them before their eyesight was lost. Dr Dewar, of Stirling, related to Dr Abercrombie the case of a lady who never walked out without seeing a little old woman, with a red cloak and crutch, who preceded her. "To see with the mind's eye," says M'Lachlan, p. 22, "is equally the privilege of the blind, though no longer capable of enjoying the beauties of nature, or fitted to transfer them to a canvass. Yet, former scenes are pictured to them as bright and beautiful as they were ever beheld."

Illusions of the senses have been recognised as such since the beginning of the present century,—in fact, since the time that Nicolai, the famous Berlin bookseller, broke through the superstitious belief of his time, and announced that the figures which tormented him by night and by day were only the phantoms of his imagination. I do not propose here to follow the progress which years, as they rolled along, threw on the subject of illusions. Nicolai's case was soon followed by papers on the subject by Dr Ferriar of Manchester, and Dr Alderson of Hull, and since then the volumes of Dr Hibbert, Sir Walter Scott, Sir David Brewster, and others in this country; also the work of Brierre de Boismont on Hallucination, and the large work, Sur la Mystique, by Görres, translated into French by Charles Sainte-Foi, carry sufficient evidence of the interest which this curious subject has created both in this country and on the continent of Europe.

I do not propose to relate to you a series of cases of all kinds of illusions, but rather to direct attention to the explanation of the phenomena, using cases only for the purpose of illustrating my views, and of showing the tests which individuals themselves have suggested to enable illusions to be distinguished from realities.

Hallucinations of the senses are at times very vivid, and it would seem that the higher the intellectual nature of the being the more vivid the illusion becomes. It is impossible to say whether the senses of the lower animals are subject to hallucinations, but this we know, that they are much less frequent in savage than in civilized life. The Esquimaux is said to recognise the images of his departed friends and relatives far away over the snow-topped hills in their land of bliss; and under suffering or approaching death, he addresses them and tells them how soon he will join them and hunt with them in their new country. But the being of high mental culture, occupied with the contemplation of his own mind, is more liable to have illusions than any savage, in consequence of the pathological conditions which sedentary habits, and the altered conditions which the circulation within the cranium undergoes in those who occupy themselves with the elucidation of mental or other abstract phenomena.

The vividness of such hallucinations is much increased when more than one sense is affected at the same time. As an illustration of this, I may shortly relate to you the case of a young medical man, who was not only an attentive student, but was also given to literary pursuits. He was going to bed after a hard night's study, when he accidentally turned up a letter from an old companion, long dead. The casual circumstance recalled some painful recollections to his mind, and while still meditating upon them he put out his candle to proceed to bed. He had hardly done so when the voice of his old companion addressed him, and at the same time he felt his arm grasped. With no fear about him, and suspecting the character of the visitation, he proceeded to relight his candle, when there stood before him, and within a few paces, the apparition of his old friend. It beckoned to the door, which my friend proceeded to open. The image glided out, and he immediately became giddy and fell down. Three senses, it will be observed, were in this case deceived, and yet the individual had no doubt of its being an illusion. He afterwards became more suspicious of his eyesight, especially in twilight or darkness, and produced the test of touch as the one most readily occurring to his mind to show whether the object was real or not. Four different methods have been suggested as tests to those who witness such phenomena,—first, we may put down the above simple plan of going forward and touching the object; second, we have the ingenious test which a patient of Dr Rutherford Russell's was in the habit of applying, and which was simply to turn his back on the suspected image,—if it was a reality, he lost sight of it; if it was in the mind's eye, a phantom of the imagination, he saw it as before. Thirdly, Sir D. Brewster has suggested another. He says, "I have found, on examining these mental impressions, that they follow the motions of the eyeball, exactly like the spectral impressions of luminous objects, and that they resemble those therefore in their apparent immobility when the eyeball is displaced by an external force." Here, therefore, we have a third and most important testing-point between real and imaginary bodies, by pressing one eyeball, and changing the axis of vision. If the object is real, it will be doubled; if mental, it will remain single. The fourth, which was applied by a patient of Sir James Simpson's, is equally interesting. This lady, who was subject to illusions of sight, told Sir James of the method she adopted to distinguish the real from the spectral. She had only to look towards a mirror to decide the point. If the image had its back to the mirror and its face to her, she concluded it was real; but if it had its face to her and also to the mirror, that it was an illusion—an interesting example of the innate power of a sane mind to distinguish a false from a real impression, by applying a new and ingenious test, capable of discriminating the one class of phenomena from the other.

II. *The Distinction to be drawn between Illusions, Delusions, and Vivid Dreams.*

But illusions of the senses must be carefully distinguished from the delusions of the insane on the one hand, and vivid dreams on the other. Writers on apparitions and allied subjects have not paid sufficient attention to the distinctions which ought to be drawn between these three related phenomena; but the peculiarities of each are not the less marked on this account. In the sane, all the senses may be deceived, but the reason and judgment never fail to introduce a test to the satisfaction of the individual that he has before him an illusion. Illusions, therefore, properly belong to the senses; delusions to the judgment. The meaning of these terms is often confounded; but while delusion is always connected with insanity, illusion is not indicative of mental disorder. "Illusions," says Dr Taylor,[1] "are sometimes met with in the sane; but when arising from external objects, the false perception is soon corrected by a reference to the other senses; and herein consists the main difference between sanity and insanity, viz., *delusion*, or a misleading of the mind. When the hallucination or illusion is believed to have a positive existence, and that belief is not removed either by reflection or an appeal to the other senses, the person is insane; but when the false sensation is immediately detected by the judgment, and is not acted on as if it were real, then the person is sane."

But the line of demarcation which bounds the illusions of the sane from the delusions of the insane is often a narrow one. Cases occasionally occur in which the illusive impression becomes so permanent and constant as to be believed in as real, and converted into that of a delusion. A case given in detail by Sir W. Scott illustrates this. The subject of it was a professional man, highly esteemed, of unusual steadiness, good sense, and integrity, well advanced in years, and prosperous as regards worldly circumstances. His depression of spirits and other symptoms began to alarm his family, and the family physician, after a time, prevailed upon his patient to disclose to him the cause of his symptoms. His visions began years before this period by the presence of a large cat, which came and disappeared he could not tell how, till the truth forced itself upon him that it was no domestic cat, but, as a bubble of the elements, had no existence save in his own visual organs or depraved imagination. This apparition was afterwards followed by that of a gentleman-usher, arrayed in court-dress, with bag and sword, lace-bound waistcoat, etc., and, whether in his own house or another, ascended the stairs before him as if to announce him in the drawing-room. This illusion was, after a few months, changed to one more horrible,—that of a skeleton, which was always present with him, alone or in company, and never quitted him. His physician was distressed to perceive how strongly this visionary apparition was

[1] Taylor, Medical Jurisprudence, p. 1025. Edit. 1865.

impressed on the imagination of his patient. He urged the sick man, who was then in bed, with questions for the purpose of leading him, as a sensible man, into such contradictions and inconsistencies as might bring his common sense, which was unimpaired, so strongly into the field as to combat successfully his fantastic disorder. "The skeleton, then," said the doctor, "seems to you to be always present?"—"It is my fate," answered the invalid, "always to see it."—"Then I understand that it is now present to your imagination?"—"To my imagination it certainly is," replied the sick man.—"And in what part of the chamber do you see it?"—"Immediately at the foot of the bed, when the curtains are left a little open," answered the invalid; "the skeleton, to my thinking, is placed between them, and fills the vacant space."—"You say you are sensible of the delusion," said the doctor; "have you firmness to convince yourself of the truth of this? Can you take courage, rise, and place yourself in the spot so seeming to be occupied, and convince yourself of the illusion?" The poor man sighed, and shook his head negatively.—"Well," said the doctor, "we will try the experiment otherwise." Accordingly, he rose from his chair by the bed-side, and placing himself between the two half-drawn curtains at the foot of the bed, indicated as the place occupied by the apparition, asked if the spectre was still visible. "Not entirely so," replied the patient, "because your person is betwixt him and me; but I observe his skull peering above your shoulder." The patient sunk into deeper and deeper dejection, and died in the same distress of mind as he had spent the latter months of his life,—a melancholy instance of the power of a diseased imagination to kill the body, even although its fantastic terrors could not overcome the intellect of the unfortunate individual.[1]

But hallucinations of the senses are also to be distinguished from vivid dreams. We generally find that those who are in the habit of seeing spectral illusions see them during the day-time, or with artificial light, but always with their eyes open; while the illusion which follows a vivid dream is only the bright dream-impression continued by means of external phenomena after the individual is awake.

Dr Ferriar[2] of Manchester has well related the case of a gentleman who was benighted while travelling alone in a remote part of the Highlands of Scotland, and was compelled to ask shelter for the evening at a small lonely hut. When he was conducted to his bedroom, the landlady observed, with mysterious reluctance, that he would find the window very secure. On examination, part of the wall appeared to have been broken down to enlarge the opening. After some inquiry, he was told that a pedlar, who had lodged in the room a short time before, had committed suicide. According to the superstition of the country, it was deemed improper to remove the body through the door of the house, and to convey it through the window was impossible without removing part of the wall. Some hints were dropped that the room had been subsequently haunted by the poor man's spirit. This gentleman laid his arms properly prepared against intrusion of any kind by the bedside, and retired to rest, not without some degree of apprehension. He was visited in a dream by a frightful apparition, and awaking in agony, found himself sitting up in bed with a pistol grasped in his right hand. On casting a fearful glance round the room, he discovered, by the moonlight, a corpse dressed in a shroud reared erect against the wall, close by the window. He summoned resolution to approach the dismal object, passed one hand over it and felt nothing, and at length discovered that the object of his terror was produced by the moonbeams forming a long bright image through the broken window, on which his fancy, impressed by his dream, had pictured with mischievous accuracy the lineaments of a body prepared for interment.

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[1] Demonology and Witchcraft. By Sir Walter Scott.

[2] Ferriar's Theory of Apparitions.

An anecdote related by Dr Abercrombie[1] also illustrates this point. It occurred to an eminent medical friend, who had sat up late one evening in considerable anxiety about one of his children who was ill. He afterwards fell asleep in his chair, and had a frightful dream, in which the prominent figure was an immense baboon. He awoke with the fright, got up instantly, and walked to a table which was in the middle of the room. He was then quite awake; but close by the wall in the end of the apartment he saw the baboon, making the same grimaces which he had seen in his dream; it continued visible about half a minute and disappeared. Again, Dr Abercrombie relates that two esteemed friends of his, while travelling in the Highlands, had occasion to sleep in separate beds in one apartment. One of them having awoke in the night, saw by the moonlight a skeleton hanging from the head of his friend's bed. He instantly got up to investigate the source of the illusion, and found it to be produced by the moonbeams falling upon the drapery of the bed, which had been thrown back in some unusual manner on account of the heat of the weather. He returned to bed, and soon fell asleep; but having awoke again some time after, the skeleton was still so distinctly before him that he could not sleep without again getting up to trace the origin of the phantom. Determined not to be disturbed a third time, he brought down the curtain into its usual state, and the skeleton appeared no more.

III. *Hallucinations of the Senses*

Naturally divide themselves—1st, *Into the mental, or those originating in the brain, and referred to the organs of sense;* 2d, *To those which have reference to the eye itself, and have their origin in its structures;* 3d, *To those which arise from the impression of outward objects on the senses, under certain states of mental excitement.*

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[1] On the Intellectual Powers, p. 367.

1*st*, then, we have to consider *Illusions having their origin in the brain, but which are referred to the different organs of sense.* In the state of perfect health, the relative intensity of these two classes of impressions—viz., the external and internal, the bodily and the mental—are nicely adjusted, and unless in a deep reverie, there is no displacing of the external picture by the mind's picture. But that images of the mind can, in certain states of the organs, displace with the vividness of reality the external picture, there can be no doubt. I might adduce many examples, from the first recorded illusions of the Berlin bookseller, Nicolai, up to our own days, to prove this; but it is unnecessary, every one now recognises the fact. I shall therefore address myself more particularly to the explanation of this fact, or how mental impressions should take certain forms in certain cases; and we shall find in the course of this analysis that illusions of the senses are always to be found in consonance with the train of thought or mental imagery which has more or less intensely occupied the thinking powers of the individual, or, having been forgotten for a time, are suddenly recalled by some casual circumstance.

I shall illustrate this by a few examples.[1] I shall more particularly record to-night the case of a lady who beheld an illusion of the form of her father, on her being suddenly seized with a feeling of fainting on going up a stair. This illusion was no doubt suggested to her mind by having casually fallen upon and perused a letter of her father's, written shortly before his death. Her mind was unconsciously dwelling on his form and figure as she proceeded up stairs, and when she was suddenly seized with a feeling of faintness, the illusion which appeared to her assumed the form of the individual on whom her mind was at the moment dwelling.

A gentleman, says Dr Hibbert,[2] was told of the death of an old and intimate friend, and was deeply affected by it. The impression, though partially banished by the business of the day, was renewed from time to time by conversing on the subject with his family and other friends. After supper he went to walk in a small court behind his house. The sky was clear, the night serene, and no light was falling upon the court from any of the windows. As he proceeded across the court, the figure of his deceased friend started up before him in a most distinct manner at the opposite angle of the court, wearing a coat of a different colour from usual; and as he gazed the image seemed to grow more and more distant, and disappeared.

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[1] The illusion of Martin Luther is sufficiently illustrative, although he himself referred it to the devil. "Being at prayers," says he, "and contemplating how Christ hung upon the cross, and suffered for our sins, there appeared suddenly on the wall a bright shining vision, and thereon appeared also a glorious form of our Saviour Christ, with his five wounds, steadfastly looking upon him as if it had been Christ himself corporeally. At first he thought it was some good revelation, but presently suspecting some juggling of the devil, said, 'Away, thou confounded devil, I know no other Christ than he which was crucified,'—whereupon the image vanished."

[2] Hibbert on Apparitions.

A lady, two months after losing her father, who was strongly attached to her, was sitting late at night at the side of her bedroom fire, and meditating upon the loss she had sustained in such a loving and good parent, when suddenly her deceased relative seemed to enter the room, walked to the opposite side of the fireplace, and took his seat there. On this she fainted, and when she recovered, the startling vision had gone.[1]

This illusion had in all probability its origin in some sudden loss of balance of the cerebral circulation, and the form assumed is explained by the character of the meditations at the time.

In the *Christian Observer* for 1829, the writer details the case of an intimate friend of his early years, and most happy in his domestic arrangements, who lost his wife under the most painful circumstances suddenly, just after she had escaped apparently from the dangers of an untoward confinement. A few weeks after this event, while travelling during the night on horseback, and in all probability thinking over his sorrows, the form of his lost relative appeared to be presented to him at a little distance in advance. He stopped his horse, and contemplated the vision with great trepidation, till, in a few seconds, it vanished away. The case of the medical student, related at page 12, also well illustrates this view of the matter. His mind was dwelling on the studies of the evening, when a letter from his old companion casually turned up; he read it, and thought of his old friend's melancholy fate. This casual circumstance no doubt gave origin to the vivid train of ideas which terminated in the illusion of his friend.[2]

Sir James Simpson related to me the following case:—On an occasion when the family was occupying a very large and extensive country mansion, there was some conversation at the breakfast-table about a book which had recently appeared. This lady strongly recommended her mother to read it, but nothing more passed at the time. A few hours afterwards, while sitting in her own room, her mother entered and went to a table where some books lay, for the purpose of searching for the volume which had been spoken of in the morning; but, knowing that it was not there, but in the library, she immediately said to her mamma that the volume was not there, but down stairs, and that she would go and fetch it. Upon passing down stairs and through a large hall, and upon entering the library, there sat her real mother perusing the book in question, the figure up stairs having been a spectral one, produced, no doubt, by her mind acutely dwelling on the conversation of the morning. Upon entering the library and seeing her mother, she swooned away.

Sir J. Simpson has also, with much kindness, put at my disposal the particulars of a case which illustrates well the views I at present wish to develop,—viz., that in cases where illusions occur they always represent objects on which the mind has been dwelling, or which have suddenly been recalled to it. A lady became a patient of Sir James's some months after losing her father, who was strongly attached to her as his only daughter, she being also devotedly attached to him. She was weak and nervous, and fancied that some of her early illusions were connected with the approach of insanity. She was taught, however, to test them, and felt much relief in discovering that they were illusions. The particular and most striking one which so well illustrates the present view, I shall relate in the words of Sir James Simpson himself. "After residing at the Granton Hotel for some two or three weeks, and some months after her father's death, she fell into a desponding state, for which it was found impossible to do much, or indeed anything, medically. On calling early one forenoon, she said to me in an excited tone—'Doctor, you must allow me to prescribe for myself to-day.'—I answered, 'Most certainly.'—'Then,' continued she, 'you must show me a dead body.' I remarked that I could not possibly do that without having her husband's consent. On consulting with him, he thought that, if possible, her wishes should be gratified, as she had for a week or two been most unhappy. My patient, her husband, and myself, forthwith drove up to the University, when I explained to Professor Goodsir the strange and unique medical prescription which my patient had ordered for herself. A body, recently dead, had by accident been brought into the anatomical rooms that morning. Professor Goodsir himself led us to the room in which the corpse was lying. My patient, who had never seen a dead body before, walked forward to it, and with both her hands grasped one of the dead man's arms, and held it for a considerable time. She refused at the time to give either her husband or myself any reason for her proceedings. Some short time afterwards she explained them to me, thus. After coming to the Granton Hotel, it happened night after night, that soon after retiring to bed, and while still awake, her bed-room door seemed to open, and then there entered a spectral procession of bearers carrying the dead body of her father. After marching round the room they always laid her father's corpse beside her in bed, and she had argued herself into the belief that if she once felt the real dead coldness of a real dead body she would know the difference between it and that which she was well aware was merely a spectral one, and thus be able to dispel the terrible illusion. The prescription, being one of her own devising, naturally, in such a constitution, had the effect expected from it in her own mind, and the nightly visits at once ceased." This lady has been well for many years, with the exception of the occasional occurrence of illusions. At these times she feels somewhat unwell, and is always reminded of the illusions by the entrance of a dog, who lounges about various parts of the room. On one occasion, while she was telling Sir James of this, he asked, if she now saw the dog? She said, "Yes, to be sure, under your foot." This lady's case has recently assumed a somewhat curious form, and one which is important in a medico-legal point of view. Her mind has become so familiarized to illusions, that she is always in the habit of testing what she sees before her. For instance, she would never think of putting a plate or glass on a table without feeling if there was really a table there, and so on with other portions of furniture. She is never sure of sitting down without ascertaining that the chair is a real one; and she has assured Sir James that, if she was to be summoned as a witness and questioned, she could not swear whether what she saw was real or illusory. One can easily realize the astonishment of the bench and bar at the examination of such a witness. But, nevertheless, it is important to be borne in mind that illusions of the sense of sight can be so continued and deceptive as to render it impossible for a witness, under certain circumstances, to swear that what she saw was true or false—was a reality or an illusion.

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[1] Sir James Simpson. [2] See Edin. Med. and Surg. Journal, vol. ix. p. 83.

A case of painful interest recently occurred to me, and although it naturally should be placed among those illusions having their origin in some foreign ingredient circulating in the blood, I prefer to place it here as it further illustrates the manner in which illusions occur, from contemplation of particular circumstances which have made a deep impression on the individual's mind, although they may be forgotten for the time. "A married lady, of great beauty and piety, was somewhat suddenly seized with the unmistakable symptoms of acute tuberculosis. Her illusions were always most distinct; she believed that many of her deceased relatives, friends, and acquaintances, visited her at her bed-side; she conversed with them, and often drew the curtain of the bed as if to behold them more distinctly; she afterwards told those about her what she had seen, but remarked that they were all clothed in white. It is somewhat remarkable that none of her living relations were ever depicted to her, and only those that were dead were recognised and spoken to." The explanation of this curious case does not appear difficult. An individual much engaged in contemplating the Scriptures must have often thought, as her friends and relations passed away, that they had gone to that better land where angels and the redeemed are spoken of as "clothed in white," "in white raiment," "raiment white as snow." The mental association of her departed friends in glory, no doubt, produced the particular characteristic which the illusion assumed: so her departed friends appeared to her clothed in white.[1]

Superstitious belief could give such apparitions a very different and probably even a more captivating explanation.

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[1] A curious corroboration of the above expressed view was given me by the husband of this lady, since these pages were in type. Some months previous to her death, she asked his permission to peruse a sermon he had preached on the text, "They shall walk with me in white: for they are worthy."—Rev. iii. 4.

A case in every way illustrative of this view was, some years ago, mentioned to me by our respected President, Dr Dunsmure, as having been witnessed by a medical friend of his. This gentleman had been forcibly struck with the countenance and appearance of a respectable stranger, who expired suddenly in a public omnibus. He was soon afterwards called to examine the body by order of the procurator-fiscal. The benignant countenance and sombre (Quaker's) dress made a deep impression on him. He did not think longer of it than the circumstances required,—in fact, it had almost vanished from his mind, until while writing in his library one afternoon, and looking up to one of the pictures on the wall, the vision of the dead stranger stood before him, entirely concealing the picture from his sight, and presenting in every respect much distinctness of outline.

The deep impression made upon this gentleman by the circumstances attending this painful case, had unconsciously been occupying his mind more than he knew of, so when the image of the Quaker stood before him, he was much startled to behold it.

Many illusions of sight have been recorded, of which I have to-night quoted more than one, where the image appeared as a skeleton. Now, as Dr Hibbert has shown that much of the superstitious belief in devils, demons, etc., was drawn from the sculptures which adorned the doorways and windows of mediæval buildings, so with the image of the skeleton, it may be said to be the ordinary representation of death; and in those who feel bodily illness, especially of a somewhat obscure kind, nothing is so liable to engage their contemplation as death; they therefore picture him in the form of a skeleton, and dwell much upon it, and it rises as such with the first mental picture that is exhibited to them.

To this class of illusions of the senses also I am inclined to refer those stories of apparitions of murdered persons haunting the murderer until driven to give himself up to justice; many examples of this kind are on record. The late Dr Abercrombie explained this by the impressions which faint light, mental emotion, and especially an arrangement of external circumstances, produce; but I think it ought more properly to be referred to the present head of our subject—to a mind haunted by the image of his victim, or the scene of his murder, gradually and with increasing intensity producing a mental picture, which finally assumes minuteness and the lineaments of a reality, the contemplation of which becomes no longer endurable.

2*d*, *Illusions having their Origin in the Structures of the Eye.*—We now come to speak of those illusions which have their origin in the peculiar structures of the eye itself; and it is necessary for me here to suppose that my readers are familiar with the anatomical structure of the eyeball. When a ray of light enters the eye, it passes through the humours or lenses, and is formed by them into an image on the choroid of the object looked at. The extremities of the rods and cones (or Jacob's membrane) have the power of appreciating the image then formed, and convey it up through the ultimate parts of the retina, thence along the optic nerve fibres to the brain. Mr Brown[1] is inclined to regard the extremities of the rods and cones as the true seat of perception, in consequence of observing a considerable distance between the retinal blood-vessels and the choroid, when performing Purkinje's experiment. This experiment consists in passing a lighted candle slowly to and fro before the eyes, at about two or three inches from the nose, when the retinal vessels will exhibit themselves before the observer not unlike branching trees. They may be seen by daylight by passing the large teeth of an ordinary comb slowly backwards and forwards before the eye, whilst looking on a smooth sheet of paper or upon the sky. There is a spot which is the direct centre of the retina, it is the seat of the most distinct vision. There is another spot, the centre of the entrance of the optic nerves, and from which the retinal artery is to be seen emerging, dividing, and sub-dividing; at this point there is no vision. The background to the artery naturally appears of a pale red, except at the part occupied by the optic nerve, where it is white.

"After so rapid a glance at so complicated a structure, and bearing in mind that some persons can see at various parts with vastly greater facility than others, it cannot be a matter of surprise that individuals not aware of these facts are now and then, especially at night and when carrying a light about, startled by what they fancy an apparition, but which is in reality nothing more than some part of the structures above considered. A lady assures us that she saw the ghost of her husband as she was going down stairs with a lighted candle in her hand. The central retinal spot when seen against a wall a few feet distant appears about the size of a human head, and wants very little to furnish it with features; figure-paper on the wall and a host of other things may supply them, or even the branches of the retinal artery, which often lends body and limbs."[2] But besides illusions formed from the structures of the eye itself, a beautiful experimental illustration can be shown of the effect of the impressions of the various prismatic colours on the retina. "When we look steadfastly at a red object for a few seconds, that part of the retina on which the image impinges begins to get less sensitive to vibrations producing red, but more sensitive to those producing blue and yellow, so that on turning the eye away from the red object and permitting a little white light to enter it, that part of the retina which received the red image will in consequence of its diminished sensibility to the colour, and its exalted sensibility to blue and yellow, be able to perceive the two latter colours best, and by their mixture will give rise to a green image of the red object." The same thing will be observed with all the other colours; the secondary image or *spectre* always appearing of the complementary colour to the object from which the impression is obtained.

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[1] See Brown of Brighton; Spectropia.

[2] Brown's Spectropia.

The duration and vividness of these impressions on the retina vary greatly in different individuals, and can be procured from almost any object, and it is only necessary to look very steadfastly at any object of a primary colour for a few seconds, and to remove it and substitute a screen, not brightly illuminated, or of a grey colour, when the image will reappear again and again, but always of the colour complementary to the primary one,—red, green, blue, orange, yellow, purple. For amusing and instructive illustrations of this kind, I beg to refer to Mr Brown's little book on Spectropia.

3d, Illusions arising from the impression of outward objects on the retina under certain states of mental excitement.

External objects viewed with different conditions of light, or when the light is impinging upon them in a peculiar manner, may assume various and very fanciful appearances. Three cases will aptly illustrate this head: the first by Sir Walter Scott. "Not long ago," says he, "after the death of an illustrious poet, who had filled a great station in the eye of the public, a literary friend, to whom the deceased had been well known, was engaged during the darkening twilight of an autumn evening in perusing one of the publications which professed to detail the habits and opinions of a distinguished individual who was now no more. A visitor was sitting in the apartment, who was also engaged in reading. Their sitting-room opened into an entrance-hall, rather fantastically filled up with articles of armour, skins of wild animals, and the like. It was when laying down his book and passing into this hall, through which the moon was beginning to shine, that the individual saw right before him and in a standing posture the real representation of his departed friend. He stopped for a moment, so as to notice the wonderful accuracy with which fancy had impressed upon the bodily eye the peculiarities of dress and posture of the illustrious poet. Sensible of the delusion, he stepped onwards towards the figure, which resolved itself, as he approached, into a screen occupied by greatcoats, shawls, plaids, and such other articles as usually are found in a country entrance-hall."[1]

A strikingly corroborative case was published some years ago. "I was called hurriedly out of bed on a summer night to a patient who was said to have committed suicide. I reached the house in time to see her expire. She was found lying huddled up on the door-mat, her friends having fled from the house in terror of her appearance from the loss of blood. She was a respectable young woman, good-looking, and her history was a melancholy one. The details of her sad end were brought before me again and again for several weeks, in consequence of my being concerned in arranging pecuniary matters with her friends. Many months afterwards I was called again professionally to the same house. It was evening, and the moon was shining brightly as I ascended the stairs; the door of the house was open, and, to my astonishment, the first thing that my eye encountered was the door-mat with its dying burden, as bright and distinct as when I first beheld it. I was much struck by the circumstance, knew the nature of the illusion, and paused for a time to observe with what accuracy fancy and the effect of the moonbeams had brought back a recurrence of the associations connected with my former visit. Upon reaching the door-mat, I found that it was only a shawl or some such covering which had been accidentally dropped there. I was not aware on approaching the house on this occasion of my mind dwelling on my former visit, nor could I again reproduce the image as I left the house, although the same materials were present: the shawls lay on the door-mat, the moonbeams fell as before, but the spell was broken."[1]

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[1] Sir W. Scott's Demonology and Witchcraft.

Two ladies, while residing in the country in the course of last autumn, had been told of the peculiarities of a certain old woman who inhabited a cottage at no great distance. It was said that she lived alone with her cat, pig, and poultry, and that she occupied herself entirely in spinning with the old-fashioned wheel and distaff. They determined to visit her. It was a pleasant evening,—the sun was just setting, throwing lights and strong shadows on the landscape as they approached the thatched dwelling of this solitary. One of the ladies remarked to the other that she heard the burr of the spinning-wheel; and, as she entered the little garden, she further remarked that she saw the woman spinning at her cottage-door, and the flax from the distaff floating in the air. On approaching the door, however, no one was there; the door was shut, and, on inquiry, they learned that the old woman had not been out that evening. She was then sitting at the cottage-fire, and received the ladies with the usual salutation of the country. Both ladies were much surprised at this, for although only one of them had heard the sound of the wheel, and seen the old woman sitting at the cottage-door, still the impression made upon the one had so affected the other that they both looked in surprise when it turned out that there had neither been old woman nor spinning-wheel at the cottage-door that evening. Their explanation on their return that evening turned on the supernatural, but our explanation will be more simple. Their imaginations had been excited about this old woman and her spinning-wheel, and, as they approached, the fancied sound and subsequent illusion of the old woman at her cottage-door was only in consonance with their train of thought at the time, and with the effect of the strong shadows of evening throwing, from some unexpected source, and on a neutral background, a fantastic resemblance of an old woman and her distaff.

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[1] Edin. Med. and Surg. Journal, No. 129.

IV. *Pathology.*

In treatises on this and allied subjects, allusions have been made to the probable pathological condition of the brain and its investing membranes, at the time when these phenomena occur. But no division of them has been given which appears satisfactory or is in accordance with recorded cases, or with the present state of our pathological knowledge.

I propose therefore to consider illusions as having their origin,—

1*st*, In passive hyperæmia, or congestion of the membranes of the brain.

2*d*, In a diminished supply of blood to the membranes of the brain, as shown in (*a*.) cases of fainting; (*b*.) cases of old age. And,

3*d*, Where foreign substances circulate in the blood of the brain.

It will be observed that I entirely exclude from this division the illusions of acute inflammation of the brain and its membranes, of fevers, and of delirium tremens. These are connected with active hyperæmia, or determination of blood to the arteries and capillaries of the membranes of the brain or brain itself, and are, like the delusions of insanity, looked upon as real, cannot be corrected by the other senses or by the reason, but disappear with the subjugation of the inflammation, the crisis of the fever, or the refreshing sleep of the drunkard.

1*st*, We shall consider cases having their origin in passive hyperæmia, or congestion of the membranes of the brain. Nicolai felt what he calls giddiness and congestion in the head before his spectral illusions appeared. He was in the habit of being periodically bled twice in the year at certain seasons, and when, from some misfortunes coming upon him, he neglected them, he began to experience fulness of blood in his head, and then to have illusions. This was congestion of blood in the membrane of his brain.

In the sixth volume of Hufeland's Journal, an illustrative case is given. "An intelligent person was sitting one evening in his chamber when the door seemed to be suddenly opened, and a person entered, whom he knew to be a friend, walked up to, and stared at him. He rose to meet his visitor, but when he approached him, the form vanished. Soon afterwards it returned, and with it a number of other persons known to the gentleman, all of whom stared at him and flocked round him. This phantom assembly, in the course of a quarter of an hour, increased to such an extent that the apartment could scarcely contain them. When he retired to his bed-chamber, he was equally followed by them; they flocked round his bed, and it was with difficulty he slept. He knew perfectly that they were phantoms, and felt no dread. They gradually disappeared after local blood-letting.

An interesting case of a similar kind occurred to the late Dr Gregory. His patient, an individual of rank, was in the habit of seeing at a certain hour after dinner the form of a hideous hag enter the room with a most malignant aspect of countenance, and strike him on the head with her staff. The Doctor dined with him one day, and tried by animated conversation to draw away the time beyond that at which the visitor generally made her appearance. The clock had scarcely struck the usual hour, however, when the gentleman exclaimed in an alarmed voice, "The hag comes again!" and immediately dropped away in a swoon. The physician caused him to be bled, and satisfied himself that the periodical attacks arose from congestion in the head, and were of the nature of apoplexy.

2*d*, The next condition of the circulation of the membranes of the brain which we have to consider in connexion with the production of illusions of the senses is that of insufficient or diminished supply. It looks somewhat perplexing to say that these phenomena can be produced from two directly opposite states of the circulation within the cranial case; but the explanation of it seems to me not difficult.

The brain is an organ of the most delicate structure and mechanism, enclosed within a set of tough membranes and bony case. When, therefore, any sudden want of balance takes place within the cranium, it cannot be so suddenly corrected as if the brain was placed, like other organs of the body, free from its bony covering, and ready to be acted on by the external pressure of the atmosphere or other agencies within the body itself. So, when a person has an illusion on assuming the erect position, after loss of blood, and in the act of fainting, the heart has not had sufficient power to correct this sudden deficiency of blood in the capillaries and vessels of the membranes of the brain, and brain itself; and the moment it does so, either from change of position or from the action of the heart becoming stronger, the illusion disappears. The same applies to congestion: only there it comes on more strongly than the other; but here also the proper balance is deranged by there being a larger quantity than usual of blood within the system; hence, the moment you correct this by blood-letting, the illusions disappear. It may be affirmed, then, that the condition which is most liable to produce illusions is want of balance; and we shall see, as we proceed, that we have a strong proof of this in the illusions of old age: the brain and its membranes being continually out of balance, from a change in the textures and tissues of the aged.

This is sufficiently explained when we consider the textural changes which occur on the brain and its membranes in advanced life. As age advances, says Dr M'Lachlan, the brain begins to lose weight, to waste, and become harder; and the membranes become thicker, more opaque, and more resisting. This is especially the case with the arachnoid. The dura mater also becomes strong and adheres firmly to the skull. This condition (on which I might greatly enlarge did your time permit) acts, in all probability, by preventing the due quantity of blood from circulating in the meninges of the aged, and, as in the case of the weak or faint, becomes a common source of illusions of the senses.

There has been much difference of opinion as to the pathological conditions of the brain and its membranes which give rise to illusions of the senses. Dr Craigie, while not denying congestion as a cause, referred much to the derangements of the digestive organs. Others have referred them to the exhaustion which follows night-watching, or diseases in which the nervous powers are worn out. While there can be no doubt that the latter can cause such phenomena in the strong and healthy, they become completely at fault in explaining the great majority of cases: those of the aged; of the weak and fainting; those who see them the result of morbid poisons circulating in the blood, or of foreign ingredients introduced into it; or those cases, such as Nicolai's, where there is congestion which requires to be removed by local or general depletion before the illusions disappear. The cases which have now been put on record, with all their particulars, are too numerous and varied for us to dogmatize. We have but to look at the functions of any other important organ, apart from the brain, and we shall see that very varied conditions of it pathologically produce very similar results. I cannot see, then, why we should fix on the brain, and through it the organs of sense, to produce illusions of the senses only and under one condition. If exhaustion of the nervous energy gives rise to these phenomena, I am prepared to admit it; but exhaustion acts only as weakness, and as the feeble circulation of old age does, by preventing the due supply of blood by means of which the functions of the brain are properly and normally performed; but this will never explain the other, and we have thus at once to refer to the divisions which I have made as including all those cases with which we have been made acquainted.

A lady, about middle age and of a robust constitution, had laboured under a prolonged attack of influenza. She was very weak, but yet was able to go about the house. Her father, a man of singularly benevolent disposition, of a striking aspect of countenance, and much beloved by her, had been dead for several years. She had accidentally fallen upon some letters of his, and was reading them when she was suddenly summoned up stairs. She immediately left the room and hurried up stairs as fast as her weak state would permit. She had not proceeded far before she became faint, and leant over the railings to rest; in doing so she beheld the image of her father standing at the foot of the stair, clad as usual, uncovered, and exhibiting his grey hairs. She looked steadfastly at him, and recognised his loving and benevolent countenance. She felt no alarm, but continued to gaze steadily at him; he gradually became dimmer and disappeared. It will be observed that this illusion disappeared with the return of the proper cerebral circulation.

Sir James Simpson, many years ago, detailed to me the history of a lady who was subject to frequent attacks of fainting, on the occurrence of which she saw various spectral illusions. On one occasion her father, who had been dead fifteen months, suddenly appeared to her and seated himself in the chair he was in the habit of occupying. He remained a short time intently looking upon her, and then disappeared.

The relations of a lady occupied, one season, a very large mansion-house in the neighbourhood of Edinburgh. One evening all the rest of the family came into town to a dinner-party, leaving her alone at home and somewhat unwell; she was very subject to attacks of fainting. After they left she felt dull, and tried to divert herself for a time by playing on her banjo. Soon afterwards a gentleman entered the room, whom she supposed to be some one calling for her mother. He advanced, however, to her and put his fingers upon her shoulder, when she instantly threw up her hand and arm to strike off the rude touch of this stranger, but her suddenly-uplifted hand struck nothing but empty space; and she swooned away as the thought broke upon her that, here in her solitude, she was visited with a new spectral figure. In this case, says Sir James Simpson, there was an illusion of touch as well as of sight. This illusion is also to be referred to some feeble circulation of the membranes of the brain going on at the time.

On one occasion, says Sir James Simpson, when this lady was sitting at a dinner-party, and was laughing along with others at some joke which had been uttered by some gentleman opposite her, upon looking across the table during this fit of merriment, she suddenly screamed out and fainted; for, behind her opposite neighbour, she suddenly saw the head of a former (dead) companion looking steadfastly at her, and slowly shaking her head as if to reprove her for her levity. I was once, says Sir James Simpson (who has kindly given me these particulars), present and near her at dinner, when she saw some illusion; what it was I could not ascertain. She shrieked and ran off to her bed-room. When her mother and I followed her, we found that she had thrown herself upon the top of her bed, and was staring and squinting unconsciously; and it was some hours before she recovered from this state. On several occasions this lady told me she was warned of the approach of an attack of illness by seeing a spectral dog walking about the room or lying upon the carpet.

It appears most probable that this lady laboured under deranged (feeble) health, that the circulation was by no means forcible, that in all likelihood the state of the blood itself was abnormal, and that when any circumstance, such as that of an exhaustive laugh, prevented temporarily the due supply of blood to the brain, an illusion was the result. In this way, I have no difficulty in classifying this very interesting case with those numerous ones arising from a temporary want of balance in the circulation within the cranium.

Of a similar nature, but always more permanent, are those illusions which arise from the pathological changes which take place in the brain and membranes of the aged. I believe that the phenomena of spectral illusions in people of advanced life bear an immeasurably greater proportion to those of any other period of existence, from all causes combined. I have looked over the history of almost every recorded case of illusions of the senses, and I find that, where the age is either actually stated or can be drawn from the remarks of the narrator, nearly two-thirds of the whole cases arise from those changes which take place in the brain, the result of advanced age.

Those of the medical profession who are conversant with the diseases of advanced life are, among many other peculiarities, familiar with their illusions. An old lady, still alive, and at present under my care, often declares that she has been removed to another house by my orders; feels wretched at being away from her own house, and yet is struck with the fact that the furniture is the same as her own. Another very estimable old lady, recently dead, at the age of eighty-nine, had a variety of curious illusions. Her old companions and friends of the end of last century used to appear before her dressed in the costume of that period. She accosted them all by name, and talked to them of the people and events of that time. In both of these cases, such illusions were frequent but not constant, and seemed to depend on mere accidental causes.

But I could not illustrate this department of my subject better than to relate shortly the principal heads of the case of the late Sir Robert Liston, as it has been detailed by Mr Craig of Ratho; and I am indebted to Mr Craig for drawing my attention to a fact which is, I think, unrecognised by the profession generally, viz., that the case of the gentleman of eighty, related by the late Dr Abercrombie in his work on the Intellectual Powers,[1] is neither more nor less than the first series of illusions which Sir Robert Liston had. The whole case has been detailed by Mr Craig in his excellent paper in the Edinburgh Medical and Surgical Journal,[2] and now forms a connected series of the illusions of an old man of considerable mental endowments and great powers as a linguist, and who had spent much of his life abroad in the diplomatic service of his country.

This gentleman, about eighty years of age, of a spare habit of body, and enjoying good health, became liable for nearly twelve years to daily visitations of spectral figures. The head and upper part of body being distinctly defined, the lower parts not so—lost as it were in a kind of cloud. They appeared in different dresses: that of the age of Louis XIV., the costumes of ancient Rome, and that of the modern Turks and Greeks. The countenances of the

[1] Abercrombie on the Intellectual Powers, p. 349.

[2] Edinburgh Medical and Surgical Journal, No. 129.

spectres he cannot recognise, but his own face has occasionally been presented to him. These figures appear in full daylight or in darkness, and he can see them equally well with his eyes open or shut.

On one occasion during the day he had a remarkable illusion. The form of his wife, who had been dead for several years, appeared to him floating around the room, and beckoning him to follow, and ultimately disappeared at the window. The illusion was so distinct, that he followed, and jumped out at the window after it. He only fell some seven and a half feet on the grass lawn; and even the fall failed to dissipate the illusion. These illusions, of constantly-varying form, occurred to this gentleman for upwards of sixteen years. He died at the age of ninety-three.[1]

A gentleman, says Dr Abercrombie, who died some time ago at the age of eighty, for several years before his death never sat down to table at his meals without the impression of sitting down with a large party dressed in the fashion of fifty years back. This gentleman was blind of one eye, and the sight of the other was very imperfect. On this account he wore over it a green shade; and he had often before him the image of his own countenance, as if it were reflected from the inner surface of the shade.[2]

I am indebted to a lady for the following case. A lady of advanced life had long resided in Carlisle in a house on the opposite side of which the daily market for crockery was held, and the practice was for the vendors to lay out their wares to the best advantage, and then surround them for safety with a series of pegs stuck into the ground with ropes between them. This old lady, from her constant observation of this scene for many years, had become so familiar with it that when she changed her house to a different part of the town, and when her illusions first took place, they always assumed the form of the women with the crockery-ware, and with the pins and ropès before them, as they had been familiar to her in the square at Carlisle. This form of illusion continued for long, and at last she became so uncertain of the distinction between illusions and realities, that when individuals entered the drawing-room, she had first to touch them before she would enter into conversation with them.

Another old lady of ninety, with whose case I have been favoured, has one continued illusion of a man and a cat. The man she does not know. He is dressed as usual in the costume of the period. The cat, too, has the same colour and appearance, and always goes through the same series of actions.

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[1] The early history of this case exhibits to us the unequivocal illusions of the aged. But the latter part of it has a new element added, that of inflammatory action. I have therefore excluded from consideration all that part of the case in which the active hyperæmic condition is manifested, a condition the existence of which was afterwards exhibited in the discovery of congestion, effusion, and adhesion of the membranes and cavities of the brain.

[2] Abercombie on the Intellectual Powers, p. 351.

Dr J. W. Begbie has favoured me with the history of a case of the illusions of the aged of more than usual interest. I shall describe the illusions of sight and hearing of this lady in Dr Begbie's own words.

"Mrs R., in her ninety-second year, has, through bodily weakness, been strictly confined to bed for some years. Since September 1866 she has been subject to illusions of sight. Frequently she is heard conversing with persons whom she describes as being present with her—sitting at her bed-side. At times she complains of the intrusion of a large black dog, at other times of several cats. These animals she extends her hand to, to feel and stroke. I have on several occasions been with Mrs R., when she has drawn my attention to fancied music, which she describes as very beautiful, and evidently that of a military band. In distinct connexion with the music, she also points to the presence of soldiers—indeed of a whole regiment—marching through the room.

"When reasoned with on the improbability of such visitations disturbing her, and even when directly contradicted, Mrs R., in the most good-humoured manner, asserts her conviction as to the reality of what she has seen and heard.

"On several occasions, when engaged in conversation with persons whom she believes to be present, Mrs R. has been heard to mention the names, and to refer to well-known incidents in the lives of persons long deceased. Mrs R. is now very infirm. Her memory, however, is wonderfully retentive, and she recalls with facility many of the events of her early life. It has been observed that the illusions of sight are less decided when Mrs R. has taken a fair amount of stimulants or enjoyed a good meal,—a circumstance which strongly favours the view, that the aberration in question is intimately connected with deficient or retarded cerebral circulation."

I might quote many similar cases as illustrations of the illusions of the aged; but one recently published by Mr Benjamin Bell, a Fellow of this College, possesses some interesting peculiarities. It was that of a lady considerably beyond eighty, of healthy constitution and vigorous mind, and fascinating in her manners and conversation. Her illusions began by hearing noises like the ringing of bells; then beautiful landscapes appeared on the curtains and walls of her room, with people in motion; then innumerable female heads and busts covering every surface on which she turned her eyes. All the countenances were pleasant—some beautiful. Their costume and mode of arranging the hair were different from what we meet with at the present time. She afterwards saw portraits of men in exquisitely carved frames—especially Dr Chalmers and Professor Miller. These spectra came and went with considerable variation for some time, occasionally representing groups of beautiful grey horses or a crowd of tortoiseshell kittens, and gradually becoming more bearable, although still present in various forms when

Mr Bell described her case. Mr Bell makes the following suggestion, that the illusory perceptions are occasioned by more or less disturbance of the capillary circulation in certain structures intimately connected with sight and hearing, viz., the corpora quadrigemina and the auditory ganglion. But it appears to me more probable that a general want of balance or derangement of the capillary circulation throughout the membranes of the brain, and brain itself, is as likely to cause such phenomena.

In cases in which several senses, and especially that of touch, is affected, this explanation will prove more satisfactory.

3d, Illusions arising from Foreign Substances circulating in the Blood of the Brain.—Another and common cause of illusions is the pathological condition of the blood in various diseases. We are well acquainted with the fact that the blood in fevers in general, and probably in the early stages of tuberculosis, in diseases of the liver, in uræmic poisoning, etc.,—contains ingredients which, while circulating in the vessels of the brain, are liable to produce illusions of the senses. We know, also, that many foreign ingredients introduced into the circulatory system from without, especially the class of narcotic medicines, is liable to produce similar phenomena.

The outbreak of various malignant fevers has been marked by the appearance of spectral illusions. Dœmerbrock mentions many cases which occurred at the outbreak of the plague at Utrecht and Meiningen. The incipient action of the febrile miasmata of Cadiz and Malaga is, first, to produce a vivified condition of the mind, followed by horrid spectral images, the forerunner of insensibility and death. Morgagni details the case of a scavenger or nightman who, in the course of some of his nocturnal duties in the latrines of Padua, was very much frightened by an apparition; he came home soon afterwards, took fever, and died. Dr Abercombie relates the case of a lady who, on retiring from a party one evening, went into a dark room to lay aside part of her dress. She saw the image of Death as a skeleton, with his hand uplifted, and holding a dart, which struck her on the left side. The same night she was seized with fever, attended with inflammation of the same side; and it is most probable that the sudden attack of pain of the commencing inflammatory attack gave rise to the idea of the blow.[1] The lady recovered. Gout is sometimes ushered in by illusions of the senses. Dr Alderson has related a marked case of this kind. An old lady, of eighty years of age, subject to attacks of this malady, often knew from her general feelings when to expect an attack. She became deaf, and distended in the organs of digestion; she soon was visited by various of her friends, whom she had not invited, and could not hear speak; but when she rang the bell for the purpose of ordering the card-table to amuse them, upon the servant entering, the whole party disappeared. A patient of my own, who is subject to attacks of this kind, has had them repeatedly ushered in by an illusion of a female dressed in widow's attire, about whose affairs she has had much anxiety, and who appears sometimes in bed, sometimes standing at the side of the bed, during the night of the first paroxysm of gout.

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[1] On the Intellectual Powers, p. 363.

There are also many substances which, when absorbed into the blood, produce illusions. The whole class of narcotics and sedatives possess this in a striking degree. I am aware that some contend that no such effects ever follow the primary action of such drugs upon the system; and although I must confess, that with the narcotics and sedatives in common use such phenomena are seldom noticed, still I am satisfied that they are occasionally, nay, not unfrequently to be heard of. A notable example of this, from the use of opium, occurred to the late Dr Gregory. He had gone to the North by sea, to visit a near relative. On returning, he had taken a moderate dose of laudanum, with the view of preventing sea-sickness, and was lying on a couch in the cabin, when the figure of the lady appeared before him in so distinct a manner that her actual presence could not have been more vivid. He was quite awake—fully sensible that it was a phantom produced by the opiate, along with his intense mental feeling, but he was unable by any mental effort to banish the vision.

Another instance by Dr Abercrombie also shows this. "A gentleman affected with a painful local disease requiring the use of large opiates, saw in one watchful night a long and regular exhibition of characters connected with certain occurrences which had been the subject of much conversation in Edinburgh before. The characters succeeded each other with all the regularity and vividness of a theatrical exhibition. He heard their conversation; long speeches were occasionally made, some in rhyme, which he distinctly remembered and repeated next day.".

An illusion, arising from the primary effects of opium, recently occurred to myself. A married female, for whom I had prescribed repeated small doses of opium for dysentery, told me next day at my visit, that she would take no more opium, as it had produced such visions. Being interested on the subject, I urged her to tell me what she had seen; but she would not do so. Her husband was then present. I repeated my inquiries next day, when her husband was absent, and she then told me that she had been twice married, and that she had no sooner taken the first dose of opium than the spectre of her former dead husband stood before her, and stared at her from the bottom of the bed, and that the distinctness of the illusion was increased with every dose of opium. A young lady, at present under treatment, had, but a few days ago, a curious illusion from the primary effects of this drug. She took a small dose of opium in the forenoon, and lay in bed quiet, but did not sleep. A short time afterwards she requested her mother, who was sitting by her bedside, to remove the large book with the beautiful gilding, which lay upon the bed, and was too heavy. This was an illusion from the opium, and of two senses, both sight and feeling.

One of the most striking cases of illusions arising from the circulation of some constituent of the bile in the blood, has recently occurred to me. This young lady labours under *abscess of the liver*, and has been now five months and a half suffering from it. Within the last three weeks her illusions of sight, hearing, and touch have become more numerous, more varied, and more continuous than I have ever seen them. She has been frequently seen during the course of her illness by Sir James Simpson. These illusions occur by night and by day, in the brightness of sunshine and darkness of the night. They consist principally of relatives and friends who have come to visit her. They are all the representatives of individuals who are alive, but many of their names her relatives cannot recognise. They are male and female. She addresses them all by name, and holds conversations with them. Sometimes they sit at her bed-side; sometimes they lie in the back of the bed, where she is; and the continued succession of them, whoever is present, is truly curious. Sometimes she supposes she has money in her hand, shows it to those around her, and is afraid she loses it. On one occasion she insisted that I should arrange some photographic apparatus that stood on a table in her bed-room, and with which she proposed to take the photograph of a young clergyman in whom she was interested. At a usual forenoon call, I found her in a great state of excitement, in consequence of a visit from a deacon of the Free Church, whom she named, and who she knew was actively engaged at the time in collecting subscriptions for his church. She told me that he had come in in the absence of her mother, and had talked and urged her until she was quite tired; that she told him she could not afford to give him so much money as he wanted, but that he would not be satisfied with less; that she then cried bitterly, and told her sister, who came, about it, and was astonished that she did not see him sitting, or hear him speaking. The illusions of this young lady have now entirely ceased; and even while they lasted, she was quite rational on every other point.

Narcotic potions, ointments, and inhalations were much used by the ancients, and especially in the temples, where apparitions of the dead or the living were expected. They no doubt acted as we have just described the primary effects of opium in certain constitutions. Buchanan, the Scottish historian, states, that the victory of Macbeth over the Danes was obtained by mixing the juice of the Atropa belladonna with wine, which was sent to Sweno during a truce. Herodotus informs us that the Scythians were intoxicated by inhaling the vapour of a species of hemp, probably the Cannabis indica; for the effect of this drug in causing apparitions from primary intoxication is notorious. Some of the species of Datura, or thorn-apple, are also much used in semi-civilized countries for such purposes, and used to be employed by the ancients in their potions, unguents, and inhalations. The Datura sanguinea is mentioned by Dr Tschudi, in his travels in Peru, as in use among the natives for making a drink called Tonga. The natives believe that by drinking this *tonga*, they are brought into communication with the spirits of their forefathers. But here, as in all these narrations, it is impossible to distinguish the proper illusions of the senses, from the numerous dreams of disturbed sleep, which are the most common result of the action of such substances. We shall not linger on this department, but hasten to make a few closing remarks. The scope of the subject we have been considering may be summed up in a few concluding sentences.

1*st*, That illusions of the senses have their origin in certain derangements of the brain connected with sensation and perception.

2*d*, That the pathology of illusions consists of two different states of the membranes and brain itself — that of congestion, and that of diminished supply of blood. The latter being by far the most common, as in those from advanced age.

3*d*, That illusions of the senses are also liable to arise from morbid substances in the blood itself, or the absorption into it of foreign ingredients.

4*th*, That in persons of sane mind and common intelligence, illusions of the senses can be, and are generally detected as such, by the reason, and by various tests which the reason supplies,—differing thus from the delusions of insanity, which are believed by the individual to be real.

5*th*, That images of sudden and vivid mental origin, or objects about which the mind has become over-excited, are liable to present themselves to the different organs of sense in the form of illusions.

6*th*, That all superstitions are traceable to the highest and profoundest intuitions of man's nature; and that these intuitions, directed by the reason, are the source of the belief in the existence of a deity, and the immortality of the soul: thus originating, at once, a knowledge of two of the deepest truths connected with our immortal being; and at the same time, when unguided by reason, assuming superstitious forms in harmony with the nature of the country and the mental idiosyncrasies of its people.

7*th*, That witchcraft resolves itself into illusions of the senses, under deep excitement or superstitious dread; and that, like insanity, it prevents the reason from distinguishing between the real and the illusory.

ARTICLE II.—*Forms of Continued Fever, and their Definitions.* By JAMES STARK, M.D., F.R.S.E.

FROM the want of good definitions of the various forms of Continued Fever, many medical practitioners find themselves at a loss to distinguish one from another, and so confound all together. It is, however, very desirable that every one should be able to recognise all the several forms, as each requires its own special treatment; and now that we have a general registry of the deaths, that register should be made as correct as possible, so as to afford reliable information as to the forms of fever which prevail in each epidemic.

Despairing of the Royal College of Physicians of London completing the work, in which it has for years been engaged, and knowing how unwilling a public body is to commit itself in print, I have, on my own responsibility, drawn up the following summary of the forms of continued fever, and have appended definitions in such terms as have always enabled me to recognise them in my own practice. As the medical certificates of the causes of death pass through my hands, it is very desirable, till a better be produced, that the medical practitioners of Scotland, in their certificates of the cause of death, should adopt and use the distinctive names here given, when every death from fever could at once be referred to its proper form. At present, from using no uniform system, this cannot be done with anything like scientific accuracy. The distinctive names have been chosen as unlike each other as possible, inasmuch as great confusion occurs when the titles of the respective forms only differ in their terminal syllables, as is the case when the terms Typhus, Typhia, and Typhinia are used.

1*st*, *Typhus Fever*—(also called spotted, maculated, low, putrid, brain, and nervous fever). A continued fever, characterized by great prostration; with a mulberry or measly rash appearing early on the skin, *but not in successive crops*, and generally remaining visible during the course of the disease. Bowels generally confined, and no lesions therein found on dissection.

2*d*, *Enteric Fever*—(also called typhoid, typhia, gastro-enteric, and gastric fever, abdominal typhus, and dothinenteritis). A continued fever, characterized by rose-coloured spots appearing chiefly on the trunk of the body about the end of the first week, *and in successive crops*, each crop disappearing in three or four days. Bowels often loose, and stools light coloured. Enlargement and ulceration of the aggregate glands of the ileum usually met with on dissection.

3*d*, *Relapsing Fever*—(also called short, or relapsing typhus, bilious typhoid fever, typhinia, and synocha). A continued fever of short but varying duration, characterized in general by an absence of eruption, but by an intermission of all the symptoms, and an apparent temporary return to health for a longer or shorter period; by the fever relapsing after five to eight or more days, and by more than one relapse occurring before health is restored. Skin often dark, or more or less yellow. As occurs in intermittents, there is a strong tendency to enlargement of the liver and spleen.

4*th*, *Gastric Fever*—(called also bilious fever). A continued fever attended by gastric and biliary derangement, with no eruption, and no tendency to relapses. Skin often more or less yellow.

5*th*, *Simple Continued Fever*—(also called simple typhus, and simple fever). A continued fever, without eruption, and without a tendency to relapses.

6*th*, *Febricula.*—A simple fever, without eruption, of from one to, at the most, three or four days' continuance.

7*th*, *Infantile Fever*—(also called infantile remittent fever). Fever occurring in childhood, characterized by daily exacerbations and remissions, with a tendency to diarrhœa. Cases of enteritis are often mistaken for this form.

Though these are the forms which prevail in this country, there is an eighth form, which is common on the continent of Europe, and which is the most fatal of all, usually cutting off 40 per cent. of those it attacks, and proving fatal on the third or fourth day of the attack. This is the epidemic brain fever, or cerebro-spinal meningitis, so well known in Russia, Norway, Sweden, etc., and which constitutes no small portion of every epidemic of fever which attacks these countries. Occasional cases occur in this country; but we still want a good definition of the disease.

ARTICLE III.—*Case of Pulsating Tumour in the Orbit cured by Ligature of the Common Carotid Artery.* By JOSEPH BELL, F.R.C.S., Lecturer on Surgery, Edinburgh.

IN a former paper in this Journal,[1] I endeavoured to elucidate the pathology of the previously recorded cases of this very rare and interesting disease, and to prove that the name Aneurism by Anastomosis, which had been previously given to these cases, was pathologically incorrect. I have since then had no occasion to modify the views then expressed as to the true pathology; but having lately had a most distinctly marked case under my care, I believe it worthy of a brief report, as the cases already recorded are so very few,—certainly not above two dozen authentic ones.

Adam Moffat, æt. 42, a strongly-made shepherd from Morebattle, called at my house on the 13th of April 1867. He stated that, about thirteen months before, he had been knocked down by an omnibus in Jedburgh, and he thinks the wheel passed over his head. His lower jaw was fractured and his head was cut; a deep scar still remains over his left eyebrow. Ever since the accident he has had occasional paroxysms of most intense headache, chiefly on the *right* side, along with a constant sense of "confusion," accompanied by the noise to be described immediately. He has noticed a protrusion of his *left* eyeball gradually increasing for the last year, and for six months his sight in it has been steadily and rapidly diminishing, so that it is almost useless to him. He feels this the more, for his *right* eye is almost blind from a very dense central nebula, which occurred some months ago in the course of a rapid inflammation of the cornea, which, from his account, was so slight as hardly to account for the density and size of the cicatrix. Since October he has been unable from blindness to follow his occupation as a shepherd, and now cannot distinguish individuals, or even recognise the presence of a large picture in a dark frame on a light-coloured wall. His spirits are exceedingly depressed, tongue foul, and indented by his teeth; pulse good, about 72.

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[1] Case of Pulsating Tumour in the Orbit, with Remarks, by Joseph Bell, F.R.C.S. Edinburgh Medical Journal, June 1861.

Present state.—The left eyeball is projected quite out of the orbit, and the cornea protrudes beyond the vertical plane of the bridge of his nose, which is prominent. Both eyelids are stretched and everted, especially the lower one, the conjunctival surface of which is displayed in its whole length, and to a breadth of more than half an inch. Constant watering from the eversion of the punctum gives him great annoyance. By a violent effort of the *orbicularis* he is able to make the eyelids almost meet over the eyeball; but in general, and when he is asleep, they leave more than one-third of the cornea exposed. This portion is already dim and lustreless from the exposure. The tumour in the orbit has a distinct pulsation synchronous with the heart, can be diminished in size by pressure, and is exceedingly soft. One specially prominent rounded tumour, just above the ball, projects in the shape and size of a filbert, and is very soft. The supra-orbital artery and vein are both very much enlarged and tortuous. The artery, nearly as large as the radial, pulsates feebly. Temporal arteries are quite normal. There is a well-marked aneurismal bruit to be heard all over the head and neck, which apparently centres about the back of the orbit. It is distressingly audible to the patient, resembling, he says, the measured beat of an engine. This has been present with very little intermission since the accident, from which so many of his symptoms seem to result.

He has had very frequent attacks of most intense headache, which is confined to the *right* side of his head and face, and is accompanied by heat and vascularity of the surface.

By holding the book very close to his eyes, in a strong light, he can distinguish XXX. of Snellen's test type. Pulsation in the tumour and the bruit in the head cease on firm compression of the left carotid in the neck.

Patient had consulted many of the most eminent practitioners in his own neighbourhood, including Dr Campbell of Dunse, Dr Bookless of Kelso, and Dr Jeffrey of Jedburgh, by whom he was advised to come to Edinburgh.

On his own authority he had been vainly endeavouring to burn down the protruding eye and lids by caustic, probably nitrate of silver, which, as may be supposed, did not much improve the condition of the parts. He is exceedingly anxious for any operation, however formidable, which may have a chance of affording relief.

Operation.—15*th April.*—To-day, assisted by Mr Bell, Drs Wilson and Downie, and Messrs Finlay, Dale, and Vartan, I tied the left common carotid artery just above the omo-hyoid. The patient's neck was short and muscular, so the fleshy belly of the omo-hyoid had to be drawn downwards, and the sterno-mastoid outwards. The descendens noni was seen and easily avoided. The vein was very large and distended, so as completely to overlap the artery, but was cautiously held aside, and then the vessel was easily exposed and isolated; a muscular branch to the sterno-mastoid was the only one that required to be tied.

5 P.M.—Three hours after the operation, pulsation in the tumour is almost gone, and the eye is already less prominent.

Very few details need be transcribed, since the progress of the case was as uneventful as could have beeen wished.

16*th.*—Intense headache on right side of forehead and face.

17*th.*—A full dose of castor-oil relieved the headache with the evacuations.

18*th.*—Greatly pleased at being able to recognise bright brass buttons on his nurse's dress. Pulsation gone; the bruit has ceased since the operation, except for a few minutes on the same evening.

19*th.*—To-day he can tell the time on my watch; is hungry, and, for the first time, is seen to grin.

23*d.*—Nothing to report. To-day reads XII. Snellen.

2*d May.*—No symptoms to note; tumour rapidly diminishing; but, as the conjunctiva of lower lid still projects, and is everted, I cut off a long slice of it with curved scissors.

3*d.*—To-day ligature came away (19th day). He reads VIII. Snellen, and can see distant objects almost as well as ever he did.

4*th.*—When up to-day he found a pair of biconvex lenses, used for distant vision after extraction of the lens, and is much delighted to discover that with them he can read 3½ Snellen—(about the size of the leaders of the *Scotsman*).

5*th.*—To-day had a long walk to see the town,—in fact, cannot be kept in the house; reads 6 without glasses.

6*th.*—Insists on going home,—to report progress in a month.

To those familiar with the literature of the subject, this case will recall those by Busk, Curling, and Nunneley, to which I have given references in the paper already alluded to, and it is an exceedingly typical one. In one or two points it has special interest:—1. That it involved the patient's only useful eye, so that the amount of loss of vision was a notable symptom, and its rapid improvement equally marked; 2. The peculiar condition of the supra-orbital artery and vein; 3. The unexpected improvement in power of vision which the biconvex lens gave.

ARTICLE IV.—*On Dilatation of the Bronchi, or Bronchiectasis.*

By T. GRAINGER STEWART, M.D., F.R.S.E., Pathologist and Extra Physician in the Royal Infirmary, Physician to the Royal Hospital for Sick Children, Lecturer on General Pathology at Surgeons' Hall, Edinburgh.

DILATATION of the Bronchi has received less attention in this country than its importance seems to warrant. The following paper embodies the result of an inquiry into its pathology and symptoms, carried on at intervals during the past few years, when examples of the disease happened to present themselves in the Infirmary.

The condition was discovered by Laennec, and the latest extended account of it which I have been able to get, is by Professor Biermer, of Zurich, who, while *privat docent* at Wurzburg, wrote on the malady. As between these two, and ever since the latter wrote, not a few observations have been published, it may be convenient to subjoin a list of authorities, so far as I am acquainted with them.[1]

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[1] Laennec, Traité de l'Auscultation médiate, tom. i. p. 206.
Andral, Clinique médicale. English, by Spillan. P. 298.
Andral, Precis d'Anatomie pathologique, tom. ii. p. 496.
Reynaud sur l'Obliteration des Bronches, Mémoires de l'Académie Royale de Médecine, tom. iv. p. 117.
Stokes on Diseases of the Chest, 1837, p. 148.
Corrigan on Cirrhosis of the Lung, Dublin Medical Journal, 1838, p. 266.
Carswell's Pathological Anatomy, 1838.
Williams (C. J. B.), Pathology and Diagnosis of Diseases of the Chest, 1840, p. 96.
Briquet, sur un Mode de Gangrene du Poumon, Archives générales, tom. xi. ser. iii., 1841, p. 1.
Beau et Maissiat, Archives générales de Médecine, tom. iii. ser. iv., 1843, p. 283.
Fauvel, sur la Bronchite capillaire suffocante, Mémoires de la Société Médicale d'Observation de Paris, tom. ii., 1844, p. 480.
Hasse's Pathological Anatomy, Syd. Soc. Trans., p. 300.
Barlow, Guy's Hospital Reports, 1847, p. 180.
Gairdner on the Pathological Anatomy of Bronchitis, 1850, p. 75.
Cruveilhier, Traité d'Anatomie pathologique, tom. ii., 1852, p. 874.
Barth, Recherches sur la Dilatation des Bronches, Mémoires de la Société d'Observation de Paris, tom. xxx., 1856, p. 469.
Lebert, Traité de l'Anatomie pathologique, 1857.
Bièrmer, zur Theorie und Anatomie der Bronchienerweiterung, Virchow's Archiv, band xix. p. 94.
Rokitansky, Pathologische Anatomie, 1861, band iii., p. 7.
Luys, Etat anatomique du Poumon dans la Dilatation des Bronches, Archives générales, 1862, tom. xx., serie v., p. 735.
Laycock, Notes on Fetid Bronchitis, Edin. Med. Journal, May 1865.
Gamgee, on the Character of Expectoration in Fetid Bronchitis and Gangrene of the Lung, Ed. Med. Journal, March 1865.
Gintrac (Henri), Nouveau Dictionnaire de Médecine et Chirurgie, tom. v. p. 622.

Besides these, I find quoted the following:—
Gelez (Ed.), de la Dilatation des Bronches, etc., Thèse de Doctorat, Paris, 1844, No. 145.
Rapp (G.), Verhandlungen du Physikal. Med. Gesellschaft zu Wurzburg, band i., 1850.

To many of them we shall have occasion to refer, as we proceed. Treading a path which has been so often trod before, it cannot be expected that I should bring forward many novel facts or opinions; but all the statements that I have to make have been verified by myself, and one or two are, I think, new. But, apart from considerations of novelty, the publication of a paper on the subject may supply a want at present existing in English medical literature.

It may be well in starting to clear the ground, by enumerating the various changes in and connected with the bronchi which have been confounded with the lesion under consideration; for, while this lesion, the true bronchiectasis, which is an important disease, arises, as I shall endeavour to show, quite independently of all other pulmonary affections, there are several minor varieties which result from other changes in the lungs; and much of the confusion which at present exists is attributable to the fact, that authors have not been sufficiently careful to mark them off from the disease which we have under consideration. There are,—

1*st*, *A general dilatation of the bronchi from hooping-cough, or from capillary bronchitis.*—Of this M. Fauvel relates, in his valuable paper on Suffocative Capillary Bronchitis,[1] that in a considerable number of his cases he found a general or partial dilatation of the bronchial ramifications. Tolerably uniform in calibre, it was most marked in the finer tubes, where the cartilages are either rare or wanting. It appeared to result from long-continued violent inspiratory efforts, in the course of which the air, being hindered from passing further in its natural direction, expanded the delicate bronchial walls. His observations are amply confirmed by Barthez and Rilliet. This form of dilatation is doubtless often recovered from: the tubes resuming their natural calibre when the dilating cause has been removed.

2*d*, *Dilatations from stricture of bronchi.*—This variety of bronchiectasis was first pointed out by M. Reynaud, in his paper on

Gombault (U. C. A.), Etude sur l'Anatomie pathologique, etc., Thèse de Doctorat, Paris, 1858.

Casalis (E. A.), Considérations sur la Formation des Dilatations bronchiques, Thèse de Doctorat, Paris, 1862.

Besnier, Anatomie pathologique, Causes, et Diagnoses de la Dilatation bronchique, Union Médicale, 1859, tom. iii. p. 469.

Lancereaux, Dilatation moniliforme d'un grande Nombre d'Extrémités bronchiques, Bullet. Soc. Anatom., 1861, p. 92.

Katz, Dilatation des Bronches, Thèse de Strasbourg, 1864.

Empis, Dilatation des Bronches, Gazette des Hôpitaux, 1863.

Van Genus, Over Bronchectasis, Nederlandsche Lancet, July and Aug. 1854.

Bamberger, Bemerkungen über die Bronchectasis Sacciformis, Oesterr. Zeitschrift, f. prakt. Heilkunde, 1859.

Cejka, Prager Vierteljahrschrift, 1863.

Holzhausen, Ueber Bronchectasie, Jena, 1865.

Skoda, Wiener Allg. Med. Zeitung, 1864.

Bamberger, Wurzburger Med. Zeitschrift, 1864.

[1] Mémoires de la Société Médicale d'Observation de Paris, 1844.

the Obliteration of Bronchi.[1] It takes place on one or both sides of the stricture, and is manifestly connected with that condition. It probably owes its origin to the increased pressure of the air in inspiration, or in forcible expiration, which naturally tends to expand the walls on either side of the constricted part.

3*d*, *Dilatations from long-standing indurations of lung substance, tubercular or inflammatory.*—These are always slight, local, and unimportant. They appear to result from retraction of the altered pulmonary tissue around them.

4*th*, *Spurious Bronchiectases*, which are in truth not bronchial at all, but the remains of chronic tubercular cavities, or abscesses in the lung tissue, which communicate with bronchial tubes.

Such are the minor varieties which we must bear in mind. It remains for us now to consider the most important form, the elucidation of which is the object of the present paper.

There are two forms of bronchiectasis, viz., the general, or uniform; and the sacular, or ampullary.

1*st*, *The general, or uniform*, is a cylindrical or fusiform dilatation of a tube, or of several tubes, throughout considerable stretches of their extent.

2*d*, *The sacular, or ampullary* is, as the name implies, an abrupt dilatation of a tube at a particular point, or at several points. Many writers distinguish two forms—the *solitary*, when but one sacular dilatation exists in a tube; and the *moniliform, or bead-like*, when a succession of them is met with. This distinction is, however, unnecessary, as solitary saculated dilatations are exceedingly rare, if ever they are met with. Indeed, it is almost doubtful whether it is necessary to distinguish between the cylindrical and the sacular, they so constantly co-exist in the same lung, and even in the same tube—the whole course being dilated, but special sacules projecting from the side here and there.

When dilatations exist in neighbouring bronchi, it not unfrequently happens that communications become established between them, and this may go on to such an extent that several bronchial tubes open into one common cavity. This fact was observed by Cruveilhier, but has hitherto attracted less attention than it deserves.

In considering dilatations more minutely, we shall first describe—

The Condition of the Bronchial Walls.

(1.) *Of the Mucous Membrane.*—In some dilatations this membrane is natural. Its surface may be coated with mucus, but the epithelium presents its ordinary characters, the cilia are distinct, the nuclei not enlarged, and the subjacent vascular layer is neither congested nor thickened. In others the membrane is thickened and opaque, the epithelial elements, though still distinct and characteristic, are granular and swollen, and the vessels are congested. In yet others, the membrane presents a velvety appearance, numerous villous processes containing congested vessels projecting from the surface. In this condition the epithelium is more altered, though still distinctly characteristic. In yet others, ulcerative or necrotic destruction of the membrane is seen: superficial or deep, limited or extensive abrasions existing.

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[1] Op. cit., p. 876.

These conditions are met with in successive stages of the affection, the first being seen only where the dilatation is slight, and the accumulation of mucus inconsiderable; the last only where dilatation is advanced, and decomposition of retained mucus has occurred. It is to the changes in the contents of the tubes, then, that I would refer the changes in this membrane, not to a morbid action originating in itself. In the earlier stages the membrane is unaltered, but, as the secretion accumulates, it becomes granular and opaque; further accumulation and decomposition of the retained material produces, of course, greater irritation, the villous condition, and ulceration.

(2.) *Of the Muscular, Elastic, and Cartilaginous Structures.*—Even in the slighter dilatations, in which the mucous membrane is quite normal, there is distinct wasting of the muscular and elastic coats. Coincidently with this wasting the dilatation of the tubes increases, and occurs as well in the cylindrical as in the sacular dilatations. On examination with high powers the tissues appear granular and indistinct, so that the individual elements of the muscular and elastic fibres can scarcely be recognised.

The atrophy sometimes advances in a very remarkable manner, particular portions of the wall wasting, and others retaining their natural volume; the latter parts form bands or ridges elevated above the surrounding mucous membrane. As the atrophy of the neighbouring parts advances, these become more and more prominent, drawing gradually closer till they resemble a mesentery connecting the unatrophied band with the bronchial wall. At length, apparently by gradual absorption, the mesentery-like membrane disappears, and the band is left as a bridge stretching across the lumen of the dilated tube. The process reminds one of the formation of the fenestrated openings which are often met with towards the margins of the valves of the aorta and pulmonary artery, and which are sometimes seen in the mesentery. It appears that the communications between adjoining bronchiectases are formed by a process identical with the above, neighbouring dilatations expanding until two of them come in contact. Through their walls an opening forms, which gradually enlarges without any truly ulcerative process. In the smaller as well as the larger tubes such bands and bridges are met with; the communications to which I have referred are of course most common in the expansions towards the extremity of the former.[1]

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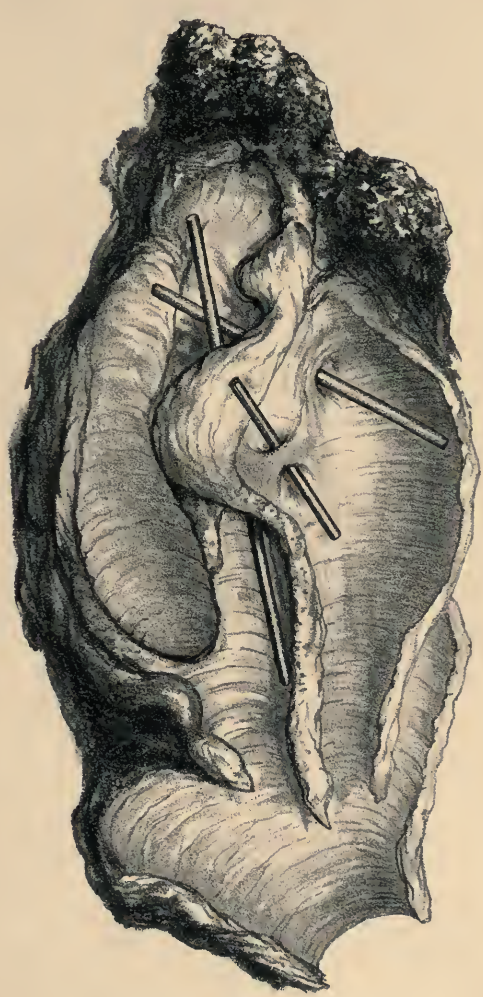
[1] See the lithograph, which shows communications between neighbouring bronchi and a bridge within one of the cavities.



W H McFarlane, Lith^r Edin^r

Group of dilated Bronchi
shewing communications at different points.

Many tubes present an appearance which, at first sight, might be taken for hypertrophy. The walls certainly are somewhat thickened, but that thickening depends upon changes in the mucous membrane already described, and the presence of ill-formed connective tissue among the denser elements of the walls, not on increased growth of these elements.[1] The irritation which causes the inflammatory thickening of the mucous coat may well also account for the spurious hypertrophy in the other.

In the earlier stages the cartilaginous plates are unaltered, but when the irritative changes occur in the tubes they frequently participate; and Andral[2] and Biermer[3] both describe outgrowths as occasionally met with projecting from them. Such outgrowths must manifestly result from extreme irritation.

THE CONTENTS OF THE DILATED TUBES.

Bronchiectases usually contain much mucus; but in different cases, and in different parts of the same lung, it may be found in very different conditions.

1. There is in some cases a copious yellow mucus quite free from fetor, and presenting the characters of the natural secretion both to the naked eye and on microscopical examination. On agitation with water, casts of smaller bronchi, containing copious epithelium, may be separated, the epithelium presenting a natural or only slightly granular appearance.

2. In other cases we find an inspissated mucus of a grey-yellow and rather opaque colour, and usually free from any disagreeable odour, and frequently partially adhering to the walls. On microscopic examination some altered cells may be recognised among this material, but it is mostly composed of granular and fatty matter.

3. In other cases the casts of the tubes are opaque and greyish in colour, and, on the application of iodine, assume a purplish hue, as was first pointed out by Dr Arthur Gamgee. When such casts are present the mucus is generally very fetid, and, on microscopic examination, innumerable fine needle-shaped crystals of margarin are seen. It appears that these products of decomposition always co-exist with the fetor.

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[1] Biermer describes three varieties:—1. Dilatation with inflammatory thickening of the walls, the mucous membrane often villous. This might be called the simply hypertrophic form, no atrophy being cognizable. The dilatation is always cylindrical or slightly spindle-shaped. 2. Dilatations with pure atrophy of the walls, which occur specially in the sacular form. 3. Dilatations with mixed degeneration of walls,—partly atrophic, partly hypertrophic. In this form atrophy occurs first, and is followed by secondary growth or hypertrophy.

I have not met with any example which I could refer to the first category; of the second and third I have seen many examples, and it appears to me that if the causes leading to the secondary hypertrophy were continued in operation for a considerable time, we should have a condition closely resembling Biermer's first form produced.

[2] Andral, Clinique Médicale, tome i.

[3] Biermer, op. cit., s. 142

4. Sometimes mingled with the strictures just described we meet with fragments of pulmonary tissue, such as are commonly seen in the contents of tubercular vomicæ.

5. The contents of the bronchiectases sometimes become inspissated, hard, and even calcareous. I have met with the two former conditions, but never with the last.

It is obvious that most of these varieties may result from changes in the natural bronchial secretion, and this is, in truth, the case. That material, being retained in the sacules, becomes inspissated and opaque, passes from a yellow to grey colour, gradually undergoes decomposition, in the course of which the peculiar fetor is produced, and the fatty crystals are formed. The fetor is peculiar, quite distinct from that of gangrene, often very nauseous, and, as the disease advances, it becomes worse. It is very possible that the grey membranous-looking casts of the tubes may be formed by fibrin poured out from the inflamed mucous surface. The shreds of pulmonary tissue afford evidence, wherever they are met with, that a destruction of lung tissue has taken place. The only other elements which appear worthy of notice are cholesterine crystals, which are now and then seen, and fungi, which are met with occasionally.

As to the *chemical composition* of the matters described, we have, in the meantime, little information,—the discussion has turned mainly upon the question of the cause of the fetor. Professor Laycock[1] concludes, from experiments and observations made by the late Professor Gregory, Dr Arthur Gamgee, and himself, that the odour must be due to butyric acid. He also states that Dr Gregory detected the odour of methylamine in some of the products of the sputa. Professor Bamberger[2] concludes that the characteristic smell of the sputa in bronchiectasis appears to depend upon a variety of odorous matters, among which the members of the series of acids of the type $C_n H_n O_4$, particularly butyric and formic acids, ammonia, and sulphuretted hydrogen, all of which may proceed from the decomposition of organic substances. He further states that purulent sputa,—*e.g.*, that of tubercular patients, —sometimes undergoes the same decomposition out of the body, and, if long kept, have the same smell as the sputa in question. Dr Arthur Gamgee,[3] from a considerable number of analyses of sputa, concludes that the occurrence of butyric acid cannot at present be proved to have any semeiological value, and that its presence is in no way characteristic of fetid bronchitis, under which term he includes bronchiectasis. He found that the distillate passed over acids and alkalies unchanged, and that, whatever the substance is, it is rich in sulphur.

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[1] Professor Laycock, Medical Times and Gazette, May 1857, p. 479; and Edinburgh Medical Journal, May 1865.

[2] Wurzburger Medizinische Zeitschrift, 1864. Quoted in Medizin Jahrbuch, bd. xii.

[3] Edinburgh Medical Journal, March 1865. Professor Laycock connects fetid sputa with the rheumatic diathesis, and conceives that when it exists there may be an excess of lactic acid in the pulmonary excretion, or of some other acid of the same class, or that the ordinary series of decompositions is interrupted, and other products result in virtue of vital changes, whereby an irritant is brought into contact with the bronchial mucous membrane. If this be

With such discrepant statements as to matters of fact before us, we cannot at present conclude what is truly the nature of the material in question.

THE CONDITION OF THE LUNG TISSUE SURROUNDING THE DILATATIONS.

1. In some cases the lung tissue is unaltered, soft, spongy, crepitant; to the naked eye as well as our microscopic examination it appears natural.

2. In others it is collapsed or atrophied. The tissue is not spongy, and does not crepitate; but it is not indurated, and, on microscopic examination, no excess of the fibrous element is to be detected. The atrophy in some cases advances to such an extent that nothing is left in the affected part but dilated bronchi.

3. In others the tissue is consolidated, the consolidation often of a very dense description, constituting what some have called cirrhosis, and others fibroid degeneration of the lung. In this condition it is asserted that, along with occlusion of the air-cells, there is a marked increase of the fibrous tissue of the organ; and this change Sir Dominic Corrigan[1] considers identical in its nature with cirrhosis of the liver. But this whole subject appears to me to be not very well cleared up. The most recent account of it is that given by Dr Sutton in the Medico-Chirurgical Transactions of London.[2] The disease which he there describes, he says, is identical with the cirrhosis of the lung of Corrigan. The principal features, as he describes them, are,—the formation of fibrous tissue in every direction throughout the lungs at the expense of the proper pulmonary

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sufficiently powerful, the same consequences will follow as with other powerful irritants (such as the vapour of iodine or chlorine), and thus a bronchitis with a copious muco-purulent discharge be excited. How easily lactic acid may undergo chemical changes is indicated by the fact, that when lactates are left in contact with putrefying matter at a temperature of 86° to 96° Fahr., butyric acid is produced.

Bamberger gives the results of the examination of two cases. In the extremely fetid sputum of one he found sulphuretted hydrogen, butyric, lactic, and, very probably, formic acids, and neither leucin, tyrosin, caprin, nor caprylic acid. But this was not a very fair example of the disease, for the patient, a man of fifty, had for fifteen years been affected with bronchiectasis, which had resulted in gangrenous ulceration and perforation into the right pleura, with the formation of limited pneumo-thorax, and the purulent matter thus formed was mingled with the expectoration. A second case afforded a purer example. A man of forty, who for several years had suffered from bronchiectasis, brought up large quantities of sputum with the characteristic odour. Its reaction was alkaline, and it contained ammonia, butyric and acetic acids, while sulphuretted hydrogen did not appear till after the matters had stood for twenty-four hours. Formic acid could not be detected.

[1] Op. cit.

[2] Medico-Chirurgical Transactions, 1865.

structures: this formation being constitutional, often associated with a similar growth in the liver, kidneys, and spleen, totally different from tubercular deposits, and affecting individuals of a particular constitution, certainly not scrofulous. Now, it seems to me that Dr Sutton gives in outline an account of a form of disease to which the name cirrhosis might very well be applied, but which is essentially different from the cirrhosis of Corrigan, inasmuch as the former is generally distributed throughout the lung, the latter is more localized; the former occurs in nodules, the latter in extensive masses; the former is not specially associated with dilatation of the bronchi, while the latter is. These characters seem sufficient to distinguish the two forms of disease. From my own examinations of cases of undoubted cirrhosis (Corrigan), it appears that the induration results from chronic inflammation, and consists not merely of such an increased growth of fibrous tissue as one sees in a cirrhotic liver, but partly of a granular thickening of the stroma of the lung, certainly with increase of fibrous tissue, and partly of inflammatory products, which are deposited in the air-cells. Such a condition as I have just described is often met with around bronchiectases. In the examples of the disease described by Dr Sutton, which I have seen, there was no special dilatation of the bronchial tubes.

4. In other cases, the surrounding tissue forms an abscess, in the centre of which the thin walls of the dilated bronchus may be seen.

5. In other cases, the walls of the bronchi and the surrounding lung tissue are destroyed by gangrenous inflammation. M. Briquet[1] was the first to draw attention to this variety of pulmonary gangrene, and his observations have since been confirmed by Dietrich[2] and others. The chief conclusions arrived at by Briquet were, that there is a form of dilatation of the bronchi in which the extremities of the tubes are dilated in sacs, which may be with or without dilatation of other parts of the bronchial tree; that these dilated extremities are liable to gangrenous destruction independently of gangrene elsewhere. It appears probable that Briquet reckoned some cases as affording examples of this variety of gangrene, which were really such, but my own experience has distinctly confirmed his general conclusions above stated.

All these conditions of the pulmonary tissue appear to be justly referable to the changes within the bronchi. The induration, the ulceration, and the gangrene, may alike be explained on this theory. The influences which suffice to irritate the bronchial wall must, if continuously or intensely applied, affect the structures lying beyond them, and the changes we have described are exactly such as would naturally follow such irritation.

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[1] Briquet, Mémoire sur un Mode de Gangrene du Poumon, dépendant de la Mortification des Extremités dilatées des Bronches, Archives générales de Médecine, 1841.

[2] Dietrich, ueber Lungenbrand, quoted by Gintrac.

The *Pleura* is in many cases adherent and in some is very singularly thickened, but, in a considerable proportion of cases, it presents no such abnormality.

The form of the Chest.—In four examples of the disease which I have observed in the hospital, the chest was more or less deformed; but the number of my cases does not entitle me to form an opinion as to the importance of this complication.

Seats of Bronchiectases.—The lower lobe and the middle lobe of the right appear to be the most common seats of this change. It occurs towards the apices sometimes, but much less frequently; usually it affects many bronchi, and occurs in both lungs.

THEORIES AS TO THE NATURE AND ORIGIN OF BRONCHIECTASIS.

The opinions expressed as to the origin of the lesion are very various. Many may be passed over without notice, but there are several which deserve special attention.[1] Those to which I think we should specially attend are those of Corrigan, Gairdner, Stokes, and Lebert.

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[1] In the following note the principal theories not given in the text are explained.

Laennec ascribed the dilatation to stagnation of the bronchial secretion and mechanical pressure on the walls. (*Op. cit.*)

Andral recognised three forms of bronchiectasis; refers two of them, in which he says thickening of the bronchial walls exists, to hypertrophy of the walls, but does not explain how such a change could lead to such a result. His third form, the beaded, is, he says, usually accompanied by thinning of the walls, and in it he thinks that the dilatation may be a mechanical result of their distention by mucus at the points where their parietes present least resistance, either by diminution of their elasticity or by their walls really becoming thinner. (*Op. cit.*, p. 298.)

Reynaud conceived the dilatations to be compensatory to the atrophy or collapse of neighbouring parts, the pressure of the inspired air acting with greater force on the diminished respiratory surface. (*Op. cit.*)

Williams lays great stress upon the importance of the influence which is continually exerted between the interior of the bronchial tree and the air,—in inspiration by the air which enters to distend the tubes, in expiration by the tubes contracting to expel the air,—and points out how, if the equality of the pressure be disturbed by more forcible pressure of the air on individual parts or on all parts, by loss of elasticity and contractility of the bronchial walls, dilitation of the tubes must occur. He also directs attention to the connexion of the cirrhosis of the lung with dilatation of bronchi, and claims priority to Sir Dominic Corrigan in this observation. (*Op. cit.*)

Cruveilhier ascribes it to cough, and the accumulation of secretion. (*Op. cit.*, tom. ii. p. 883.)

Barth says that it may arise from changes,—1*st*, in the pleura, pleuritic adhesions drawing the bronchi open; 2*d*, in the lungs, according to Corrigan's view; 3*d*, in the bronchi, according to Stokes' view. These causes, singly or even in conjunction with one another, induce the results. He conceives, further, that an important influence is exerted by the presence of the air, which, being forcibly drawn in through the accumulated mucus, does not pass out with expiration, and so distends them. (Barth, *loc. cit.*)

Other writers adopt either a modification of the theories given in the text, or in this note.

I. *The Theory of Corrigan.*[1]—Having described and figured the condition of the pulmonary tissue, to which he applied the term cirrhosis, he says: "The dilatation of the bronchial tubes is partly owing to the contractile process going on in the tissue of the lung—partly to the expansive action of the parietes of the chest in the act of inspiration." And he explains this contractile influence thus:—"If there were but one bronchial tube with contracting fibro-cellular tissue placed around it, then the contracting tissue would, as in the instance of stricture of the œsophagus or rectum, cause narrowing of the tube; but when there is, as in the lung, a number of bronchial tubes, and the contracting tissue not placed around the tubes, but occupying the intervals between the tubes, then the slow contraction of this tissue will tend to draw the parietes of one tube towards the parietes of another, and necessarily will dilate them." This dilatation is further favoured by each expansion of the chest, which tends to draw open the tubes. Such is the theory of Corrigan.

This opinion has been very generally accepted both in this country and on the Continent, but certain difficulties present themselves which show it to be untenable.

1. That many dilatations are not surrounded by condensed pulmonary tissue, as has been already shown.

2. That retraction by fibrous tissue does not account for some of the anatomical changes met with in the disease, particularly the formation of bridges in the bronchi, and of communications between neighbouring dilatations.

3. That, at least in one of my cases, where consolidation ultimately occurred, it was clinically proved that dilatation preceded the condensation of the pulmonary tissue. (See Case IV.)

These considerations appear to render Corrigan's theory untenable.

II. *The Theory of Prof. Gairdner.*[2]—This author says that almost all the so-called bronchial dilatations, and all of those presenting the abrupt saculated condition, are in fact results of ulcerative excavations of the lungs (tubercular or other) communicating with bronchi, and expanded beyond their original size by the inspiratory force.

I am satisfied, as I indicated in the commencement of this paper, that in some supposed dilatations this explanation is correct, as appeared to be shown in a case exhibited by Dr Sanders to the Medico-Chirurgical Society, and recorded in the Edinburgh Medical Journal for February 1866; but in a great majority of cases the explanation cannot hold good, and that for several reasons.

1. That in many cases of bronchiectasis there is no tubercular disease of the lungs, and no evidence of non-tubercular ulcerations.

2. That many dilatations may be distinctly shown to be in the line

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[1] Dublin Medical Journal, vol. xii., 1838, p. 270.

[2] On the Pathological Anatomy of Bronchitis, etc. Edinburgh, 1850, p. 76.

of bronchial tubes, and the bronchi may not only be traced into them at one extremity, but out of them at the other.

3. That the mucous lining of many of them presents the ordinary character of bronchial mucous membrane.

4. That they are not common towards the apices, where tubercular excavations are most frequent.

III. *The Theory of Stokes.*[1]—Dr Stokes conceived that most importance must be attached to loss of elasticity, contractility, and ciliary movement, and that the starting-point is in all cases bronchitis. From inflammation, he said, 1*st*, The non-muscular longitudinal fibres lose their elasticity, and so cough and forced inspirations may dilate the tubes. 2*d*, Paralysis of the circular muscular fibres, whereby the tubes dilate on the same principle as the intestines do in cases of enteritis or ileus. 3*d*, The cilia of the epithelium lose their mobility.

This view appears to be correct, in so far as it assumes certain changes in the bronchial walls, but in the explanation of the origin of these changes, it appears that there are certain difficulties,—1*st*, That if bronchiectasis depended simply on bronchitis, it would necessarily be much more frequent than it is. 2*d*, That this theory affords no satisfactory explanation of the formation of the bridges and communications which have been described.

IV. *The Theory of Lebert.*[2]—This author concurs generally in the opinion of Stokes, but thinks the loss of power dependent upon nervous causes rather than upon inflammation of the bronchi. He thus obviates one of the difficulties which beset the view of Stokes; but it must be borne in mind that the supposed influence of the nervous system is purely hypothetical. Still his view is the only one which is not opposed to known facts.

The *conclusions* which appear legitimately deducible from my own observations are,—

1. That the essential element of bronchiectasis is atrophy of the bronchial wall; that the cause of such atrophy is not yet ascertained, but may perhaps be connected with constitutional peculiarities.

2. That the walls, being so thinned and weakened, readily yield to the pressure of air; it may be in deep and sudden inspirations or during violent muscular exertions, certainly in the sudden expiratory effort made while the glottis is closed in the act of coughing.

3. The enfeebled and dilated condition of the bronchi favour the accumulation of the mucus secreted by the bronchial membrane.

4. That the mucus, accumulating and undergoing decomposition in the dilatations, irritates the mucous membrane, leads to inflammation, and the formation of villous processes from it, to the formation of increased connective tissue in the walls, to irritation of the cartilages, and frequently to consolidation of the surrounding lung

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[1] Stokes on the Diagnosis and Treatment of Diseases of the Chest. Dublin, 1837.

[2] Lebert's Anatomie pathologique, tome i. p. 620.

tissue and pleuritic adhesions, sometimes also to abscess or to limited gangrene.

The process, then, would appear to correspond in its early stage to what is met with in other parts of the body; as, for example, in aneurism, where, from weakening of the middle coat of the artery, the pressure of the blood causes the vessel to expand, and that to a constantly increasing extent. It also resembles the process by which staphyloma of the sclerotic is formed, in which the membrane, being weakened at certain points, is unable to withstand the pressure of the fluids of the globe, and, consequently, a bulging ensues.

Clinical History of the Disease.

In many, if not in all cases, the affection of the bronchi comes on insiduously, no symptoms appearing to attract the attention of the patient or his friends, perhaps for long after the dilatations have been formed. But gradually or suddenly inflammation of the bronchial mucous membrane is lighted up, and symptoms of bronchitis become well marked. Those of bronchiectasis, though distinct when looked for, are not such as to force themselves on the attention until decomposition of the secretion has taken place; the breath and sputum then become fetid, and the general health obviously suffers. Decomposition of the secretion appears to be followed by consolidation of the lung, and sometimes by ulceration, abscess, or gangrene. Following upon these, we sometimes have a fatal result from perforation of the pleura, leading to empyema and pneumo-thorax (see Case III.). Sometimes death results from exhaustion from the constant discharge of the sputum. Sometimes from a peculiar febrile disturbance,—a kind of septicæmia, probably induced by absorption into the blood of some of the products of decomposition (see Case IV.).

In a great majority of cases, the disease tends to a fatal result, but now and then recoveries occur. Gintrac relates that recovery has been observed in two ways, each of them sufficiently remarkable: 1*st*, from the cretification of the contents, and the conversion of the walls into a sort of fibrous capsule; 2*d*, from penetration of the pleura and thoracic parictes and discharge of the contents outwards. It seems to me that such cures are scarcely credible, and certainly cannot occur in any except those cases which are limited to a single bronchus, or to few.

The *age* at which it occurs is very various. I have met with it in young people, as well as at and after the prime of life. As to *sex*, it appears that, in the majority of cases, it occurs in the male. It is usually stated to be non-hereditary, and not constitutional in its origin; but, from a consideration of its nature, it appears to me probable that it may ultimately be proved to be both; and I cannot help thinking it more than a coincidence, that of the few cases I have observed, two were in members of the same family.

Symptoms.—The symptoms of bronchiectasis which most attract attention are, the odour of the breath, the characters of the sputum, and the cough.

The *breath* is often peculiarly fetid, the fetor somewhat different from that of the sputum, and often intensely disagreeable to the patient himself. It is difficult to find a smell closely corresponding to it, but it is certainly quite distinct from that of gangrene. This symptom is not present in all cases (see Cases V., VI., and VII.), nor is it present in the earlier stages of any case. It is only as the disease advances, and when decomposition of the bronchial secretion has taken place, that it occurs.

The *sputum* is usually copious—15 to 30 oz. daily—of a greenish-yellow colour and nummular, rarely frothy on the surface; sometimes gelatinous, and with a tendency to adhere to the walls of the vessel. Sometimes it sinks, sometimes floats in water; and when a quantity of it is allowed to stand in a glass jar, it separates into layers or strata; a more mucous and fatty layer, which floats on the surface; a more purulent and granular, which sinks to the bottom; and a greenish watery fluid, in which the other two are embedded, but which forms an intermediate layer. In a majority of cases—at least of cases in which this disease is recognised—it is very fetid. The fetor resembling that of the breath, but in a more concentrated form. It is quite distinct from that of gangrene. On agitating the recent sputum with water, more opaque filaments, of varying thickness, separate themselves, and sink to the bottom. These are casts of bronchial tubes. Their character has been sufficiently described in a previous part of the paper. On microscopic examination, one may find the different elements previously described; but I have not seen, as yet, the needles of Margarin, which are found so abundantly postmortem in the recesses of the bronchi.

Hæmoptysis.—Blood is expectorated along with the sputum, sometimes in small quantities, merely streaking the expectoration, which otherwise presents the characters above described; but sometimes it is brought up in large quantities, much as in phthisis. In such cases (see Case V.), the sputum may be not at all abundant; it is only when the hæmorrhage occurs that almost any discharge takes place. Barth met with two cases in which the hæmoptysis proved fatal.

Cough is frequent, and occurs in paroxysms; but moist, and usually quite painless. After a fit of coughing, large quantities of the sputum are brought up without difficulty.

Respiration is generally easy and quiet while the patient is at rest, but exertion speedily induces dyspnœa.

Physical Signs.—There is, in the advanced stages, dulness on percussion over the parts of the lung which have become consolidated, sometimes relieved by an unusually clear note, if a dilatation be situated near the surface, and empty. In the earlier stages the percussion note is little altered, and I have seen, even when the fetor was distinct, the percussion note most markedly dull.

On auscultation, cavernous sounds are sometimes heard, and very commonly coarse moist rales, sometimes even gurgling. But the situation of these sounds generally serves to distinguish them from those of phthisis; for while the latter are usually situated towards the apices, the former occur towards the middle and lower parts, the apices being comparatively free. In well-marked cases, these symptoms are sufficiently distinctive, but are slighter. These symptoms, generally, might be mistaken for those of gangrene of the lung; but the history of the patient, and the duration of the malady, soon suffice to correct that opinion.

In the later stages, *the pulse* is generally rapid, even independently of the occurrence of inflammatory complications. There is also some *restlessness at night*, sometimes accompanied by *delirium*, although, as a rule, the patients enjoy considerable immunity from nervous complications.

The *digestive* and *urinary functions* are, in most cases, natural; though sometimes the patients complain of nausea and loss of appetite.

Treatment.—With regard to treatment, it is to be feared that little can be accomplished in the way of cure, and that our efforts must mainly be directed towards the alleviation of urgent symptoms. The following points are insisted upon by some continental writers of experience:—With the view of clearing the tubes, by promoting expectoration, Kermes mineral (ter-sulphuret of antimony), ipecacuanha, and tartar emetic, are recommended; to relieve cough, opiates; to diminish secretion, balsamic remedies, as tolu, tar, turpentine, and copaiba; to diminish bronchial secretion, and avert or arrest hæmoptysis, astringents, as catechu and rhatany; while counter-irritants, of various kinds, applied over the chest, and inhalations of medicated substances, are found eminently useful.

It seems to me that we can do nothing to oppose the formation of the dilatations; that it is only in obviating or diminishing the secondary results that we can expect to be useful. Excessive secretion may be relieved by the administration of astringents and balsamic substances, either by the stomach or by inhalation, and often yield to counter-irritation, especially by blisters.

If the disease has advanced to the stage of decomposition of the secretion, and consequent fetor of the breath and sputum, benefit may result from the inhalation of creasote vapour. This is best effected by pouring a few drops of creasote into an ordinary inhaling apparatus, or simply dropping a little into a cup of hot water, and directing the patient to inhale the vapour as it rises. It is certainly in those forms of fetor of breath, which appear to result from an altered secretion rather than a decomposition of natural mucus, that this treatment is most efficacious; but even in cases of true bronchiectasis it may sometimes be found useful.

Appendix of Illustrative Cases.

Case I.—*Bronchial Symptoms of some years' standing—Consolidation of Lung—Death from Exhaustion—Autopsy—Bronchiectasis—Gangrenous Ulceration and Consolidation of Lung.*

Thomas Murray, æt. 34, was under the care of Professor Maclagan. The patient had for some years suffered from short cough, especially in winter, but had not become emaciated or much enfeebled. His cough became gradually more severe, and he was admitted to the Infirmary, 1st June 1865. At that time there was complete dulness on the left side, posteriorly, with loud mucous râles, especially over certain parts, and harshness, with increased vocal resonance. Over the right side, also, there was dulness on percussion; and on auscultation, the breathing was harsh, and accompanied by mucous râles. His breath and sputum had a feculent odour. While under observation, gurgling sounds became more distinct throughout the chest. His pulse was of good strength. Suddenly, and without obvious cause, he became worse, and sank on 16th June.

Autopsy.—The body was not emaciated. Both lungs were adherent; the left was dense and solid throughout the greater part of its extent; the right was consolidated in its upper half. Both contained numerous cavities throughout their substance, but there was no trace of tubercular deposit, and the cavities were evidently formed by dilated bronchi. A large proportion of the bronchi about the third and fourth division were dilated—some large enough to hold a miniè rifle-ball. In some parts, the bronchial mucous membrane was thickened and ulcerated; and in the largest cavity, situated about the middle of the left lung, an ulcerative process had completely destroyed the walls of the dilated bronchi, and the cavity was bounded by consolidated lung tissue. The cavities contained purulent and slough-like masses, which had a peculiar feculent odour, and, on microscopic examination, were found to contain, besides numerous molecules and granules, a few vegetable structures and a large number of fine needle-shaped crystals of margarin. In some corners of the dilated parts, there were firm rounded masses of a dense consistence, but not calcareous. The other viscera were natural.

Commentary.—Symptoms of chest affection, though not of an urgent character, had existed for some years; and the lesions were doubtless well advanced when he was admitted on the 1st of June. The sudden increase of illness and the death were probably due to the gangrenous destruction of lung tissue, which had set in around one of the principal dilatations.

Case II.—*Deformity of Chest—Bronchitis, Hæmoptysis—Fetor of Breath, Consolidation of Lung, etc.—Death from Exhaustion—Autopsy—Bronchiectasis with Consolidation, etc.*

John Storrie, æt. 32, a printer, was under the care of Professor Laycock. The patient had been deformed since he was nine months old; had marked lateral curvature; but was of steady habits, and had enjoyed tolerably good health until January 1865, when he had an attack of what he termed influenza. From this he entirely recovered, after five weeks' illness. In July of that year he lay down in the Meadows, while heated, and at night had cough and sore throat. In August, he went to the country, and then spat a little blood. In the end of September he returned to Edinburgh, and again suffered from slight hæmoptysis. His cough and weakness increasing, he was admitted to the Royal Infirmary on 5th November 1865. At that time his pulse was rapid,—120; his cardiac sounds were natural; his appetite was poor, his tongue foul, and he occasionally passed blood by stool. He had no hæmorrhoids. His genito-urinary system was normal. There was dulness over the lower part of the right lung. The respiratory murmurs were harsh, and the vocal resonance increased. On the left side, there was dulness at the apex. The respiratory murmurs were the same as on the right side. The cough was short, frequent, and troublesome. The sputum was copious, and smelt of moist mortar, while his breath had a fæcal odour. Some amelioration of the chest symptoms followed the inhalation of iodine, but the weakness gradually increased and he died 18th November.

Autopsy.—The body was deformed, in consequence of marked lateral curvature of the spine. The heart was natural. The right lung was densely adherent at the apex, and posteriorly. The left had only a few adhesions at its apex. The lungs were in some parts emphysematous, in others consolidated. There was no recent tubercle, but some old deposits of limited extent. The trachea was natural. Throughout both lungs many of the bronchi were dilated. It was most marked in those about the fourth division, and existed among both consolidated and emphysematous tissue. In the middle lobe of the right lung there were several gangrenous cavities, the largest of the size of a small walnut, the walls of which were composed not of mucous membrane, but of consolidated lung tissue. In its neighbourhood there were numerous intercommunicating dilated bronchi, and many with bridges in their walls. The bronchi contained much fetid and purulent mucus, among which were many casts of natural and dilated tubes, exhibiting cells altered in various ways, granular and fatty transformation of the casts, and many which exhibited the purple reaction with iodine which was first pointed out by Dr Gamgee. Among the more opaque-looking contents of the tubes, there were many of the peculiar crystals of margarin, here and there a few vegetable structures (whose characters I did not determine) were seen, and in the gangrenous cavities and the bronchi connected with them there were distinct shreds of pulmonary fibrous tissue. The abdominal organs presented no important lesion.

Commentary.—It is to be noticed here that the patient was deformed, and that he had exhibited no distinct pulmonary symptom till four months before his death. That those symptoms came on after exposure to cold, and continued till his death. I cannot doubt that the process of dilatation had been going on for a longer period, and that the inflammatory process merely led to some of the secondary changes. It is to be noticed further, that the dilatation existed alike with emphysema and with consolidation of the neighbouring lung tissue, and was present on both sides, although the adhesions were mostly confined to one.

CASE III.—*Winter Cough for some years—Weakness gradually increasing for some months—Death from Empyema and Pneumo-thorax—Autopsy—Bronchiectasis, Empyema—Limited gangrenous Perforation.*

John Storrie, a tailor, aged 59, admitted under my own care, 15th October 1866. He was a tall, sallow man, with a somewhat greasy skin, and with rounded shoulders. He stated that he had enjoyed good health, though subject to a cough, particularly in winter; that he had had little expectoration, and that his breath never had a disagreeable smell; but in the summer and autumn he had felt weak, and for five weeks before admission had been unable to work. He was uncle to the patient John Storrie, Case II. On admission, the breath was offensive, the sputum copious, yellowish-green in colour, and with more solid grey streaks here and there. These streaks, on being washed out, were found to be casts of bronchial tubes, in the condition of degeneration, and they assumed a violet-blue colour with iodine. The lungs were nowhere markedly resonant on percussion, but nowhere absolutely dull. Tubular breathing and coarse moist râles were heard over many points of both organs, and towards the base of the left lung there was distinct amphoric breathing. The voice was husky, and the digestion was feeble; there was no other morbid condition. There was no difficulty in this case in establishing a diagnosis of dilatation of the bronchi. The patient was ordered good nutritious diet, and to inhale the vapour of creasote. He continued in much the same state until the 20th, when a quantity of thin yellowish pus was expectorated, altering the general appearance, though not the smell of the sputum. After this he became rapidy weaker, and died 25th October.

Autopsy.—The heart was natural, the aorta atheromatous, the two layers of the pleura were generally adherent, but on the left side at two points there were limited deposits of pus. Many of the bronchi were dilated throughout the whole of both lungs. In some parts, their walls were thin and free from inflammation; in others, thickened and deeply congested; in yet others, it was partially destroyed. The dilatations were filled with a peculiar kind of matter, of a most offensive odour. Among this matter, casts could be traced, similar to those expectorated during life, and fine crystals of margarin. It was evident that these changes of the mucous membrane were secondary to the dilatation. At some of the expanded portions, the ulceration had extended to the lung substance and formed limited gangrenous patches. For the most part, however, around the sacules the lung tissue was indurated and pneumonic, but did not present such an appearance as to deserve the name cirrhosis. Each of the limited empyemata communicated with dilated bronchi; but it appeared from the history, as well as the pathological appearances, that perforation had taken place into the lung. The dilatations were irregular, and everywhere accompanied by thinning of the bronchial walls—many parts presented the trabeculæ bridges and communications between neighbouring bronchi, which I have described in the general part of this paper. The other organs presented no important lesion.

Commentary.—The physical signs, the peculiar appearance, the fetor of the breath, and the character of the sputum, were eminently characteristic. There was no hæmorrhage, and the general symptoms appear to have been quite trifling for long after dilatation had been established. From the general dulness on percussion, I had failed to detect the limited purulent deposits in the left pleural sac, but I doubt not they existed at the time of his admission, and merely opened into the bronchi at the time that expectoration of pus began. The adhesions were so dense that no considerable pneumo-thorax occurred when the openings became established. The lungs afforded admirable illustrations of the disease.

CASE IV.—*Deformed Chest—Bronchitis, slight Hæmoptysis—Form of Cavity—Consolidation of Lung—Death from Septicæmia—Autopsy, Bronchiectasis, etc.*

Neil Mackinnon, æt. 57, a labourer, was admitted to the Royal Infirmary, under my own care, 14th September 1865. Was a Highlander, of dusky complexion and peculiarly oily skin, with greatly rounded shoulders and of short stature; stated that he had been a tall man formerly, but had been creeping down for some time; worked regularly till 20th May, when, after great exertion, he lay down to sleep in a wood, and got drenched with rain. He took a severe cough, spat some blood, was confined to bed for six or seven weeks, and from that time to the date of admission, though able to go about, was unfit for work. On admission his voice was husky, and he brought up, with little effort, large quantities of yellow fetid sputum. There was no marked dulness on percussion over the lungs; coarse crepitation and snoring râles were heard towards the bases; at the apices, the breathing was harsh; there were no moist sounds; there was a distinct systolic blowing at the apex of the heart. He complained much of flatulence; but the appetite was good; bowels regular. On September 24th, the following report of the state of the chest was made:—Percussion note was wanting in resonance, but there was no special dulness. Auscultation on right side elicited coarse moist râles, particularly towards the base, and there were occasional blowing sounds with increase of vocal resonance; on the left side the respiration was harsh at the apex, rather feeble, and accompanied by moist râles at the base. In October the lower part of the left lung was markedly duller than the other parts, and distinct cavernous sounds were heard over the lower part of the right. The character of the sputum was unaltered; early in November the general health appeared improved. On the 11th he had rigors, and the character of the fetor became somewhat altered. The amount of the sputum was 7½ oz. in twenty-four hours; the patient became thereafter more feverish, and died exhausted on 29th November.

Autopsy.—The body was emaciated. The skin was dark. The spinal column was greatly arched, but not deformed Very dense adhesions, at some parts several lines thick, connected the lungs with the thoracic wall and the diaphragm. They were less firm on the left than the right side. On microscopic examination, the lower part of both lungs was much consolidated, but contained numerous anfractuous cavities, mostly lined with smooth mucous membranes, and continuous with bronchi above. Most of them contained a peculiar soft curdy-looking matter composed of granular and fatty material, with numerous fatty crystals. In other sacules there were fœtid pus, and numerous bronchial casts. The mucous membrane was in some parts thickened, red, and velvety; in others thin. The following conditions of the bronchial tubes were observed:—1. Some were simply dilated; the mucous membrane not thickened, but thin and delicate. The walls evidently thinned, many dilatations extending to their finest extremities. Around them no consolidation of lung substance was found. 2. Some were in a condition essentially similar, but the mucous membrane was velvety. 3. In some of the dilatations the mucous membrane was thick and inflamed, and here and there eroded. 4. Some cavities communicated with several bronchi, were livid, with reddened and inflamed mucous membrane. Around these cavities the lung substance was consolidated. On microscopic examination of the consolidated lung tissue, little trace of air-cells could be made out, and it was mostly composed of fibrous tissue. The heart was somewhat hypertrophied and dilated, and the abdominal viscera were natural.

Commentary.—In this case, I cannot doubt that the process of dilatation of the bronchi had preceded the acute and sudden attack, and that it attracted no attention until it was well advanced, and marked bronchitis was superadded. In this case, the peculiar state in which the patient lay for some time before death suggested the idea of septicæmia, and certainly no other explanation occurred to my mind.

CASE V.—*Bronchitis—Hæmoptysis, severe and repeated—Perforation of Pleura—Pneumo-thorax—Death—Autopsy, Bronchiectasis, Pneumo-thorax.*

Annie Wilkie, æt. 19, admitted to Ward XI., under the care of Dr Maclagan, 6th December 1866, a book-folder.

History.[1]—The patient enjoyed good health up to the year 1864, when she caught a heavy cold, which has never left her since. Two years since she first began to spit blood, and for this symptom she was admitted to this ward in November 1865. At that date, the hæmoptysis was severe, but not very frequent, and had recurred for three or four months at the menstrual period in quantities sufficient to excite her alarm. She was not regular, not having menstruated for three months before admission. After the most careful and oft-repeated physical examination of the chest, no trace of pulmonary phthisis or bronchitis being evident, the idea of vicarious menstruation suggested itself, but was soon dispelled by the occurrence of hæmorrhage by the mouth, at intervals of only a few days. Rallying under the rest and quiet of the hospital regime, she left the ward in the end of December 1865, but in the end of January 1866, was re-admitted with very severe hæmoptysis, and continued in the house for two months.

During this time, the only thoracic physical sign that drew attention was remarkable loudness of the cardiac sounds, without any hypertrophy of the organ, and occasionally accompanied by a bruit at the base. The walls of the chest seemed very thin, and showed the heart's impulse much more plainly than usual. There was no comparative dulness on percussion at either apex, nor were the respiratory sounds morbidly altered in character. During the summer months she was under medical care (my own), with occasional severe attacks of hæmoptysis, which came on after exertion. In October, being ordered cod-liver oil, she improved in general health, and the tendency to hæmorrhage seemed checked till the end of November, when a severe flow occurring she again entered the Infirmary.

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[1] For this report of the history, I am indebted to Dr Wolston, formerly Resident-Physician to the Clinical Wards.

On Admission.—Respiratory system.—The whole of the chest is flattened on both sides. On the right side the breathing is weak. Slight increase of vocal resonance and slight crepitation over the middle lobe. No expectoration and no cough, except when hæmoptysis occurs. She cannot lie on right side.

Circulatory system.—Is troubled by palpitation. Heart's impulse increased, otherwise normal. Pulse 80—irregular.

Nervous system.—Complains of pain in the epigastrium and precordial region, also in the lower dorsal region when she stoops.

Digestive system.—Suffers from dyspepsia. Bowels regular.

Genito-urinary system.—During the last six months has menstruated only at intervals of six weeks. Urine clear amber colour; sp. gr., 1029; slight cloud, acid; some urates present.

Dec. 8*th.*—Was given tannic acid gr. v, every two hours, which, making her sick, was changed on the 11th for gallic acid.

On the 13th, lost 8 oz. of blood in one attack this morning. Given acetate of lead in ten grain doses every six hours, which had also the effect of making her sick, and was discontinued on the 14th. On the morning of that day she had another severe attack of hæmoptysis. The blood expectorated was estimated at 27 oz.

18*th.*—The physical signs were little altered. The sputum was purulent and copious.

On the 21st, she complained of great pain in the precordial region. On the 24th, there was distinct pneumo-thorax of the left side; and on the 27th she sank.

Autospy (28*th Dec.* 1866).—The body was emaciated. The left side of the thorax contained some air and several pints of fetid pus. This was confined by adhesion in the lower and posterior part. The adhesions were not old and dense, but thin, and rather recent. In consequence of the effusion, the lung was pressed forward and upward. Towards the base of the right lung, there was some recent pleuritic effusion, but no fluid; the lung was expanded throughout, but not emphysematous. There was no recent tubercle in either lung; and there were only three or four minute nodules, which might have owed their origin to a tuberculous process. At the apex of the right there were some slight puckerings, and a single emphysematous bulla of the size of a cherry-stone. In the lower lobe of the left (the compressed) lung there were several gangrenous abscesses, each of about the size of an almond,—two of them, both situated towards the posterior part of the diaphragmatic surface, communicated with the pleural cavity. In the centre of these abscesses, dilated bronchi were distinguishable. The larger bronchi in both lungs were natural. Many of them about the third and fourth division, and particularly towards the middle and base posteriorly, were dilated. The dilatations were fusiform, and varied in size. None of them had their mucous membrane inflamed, or contained a fetid secretion; but in most of them there was a quantity of muco-purulent matter, which on microscopic examination was found to be composed of mucous corpuscles, columnar epithelium, natural and granular, along with a considerable amount of granular matter. The tissue around the dilated bronchi was atrophied, and the middle lobe of the right lung consisted of little more than a group of dilatations. The walls of the dilated portions were thin, the mucous membrane not thickened. The epithelium was carefully examined and compared with corresponding structures from healthy bronchi, and was found natural. There was no condensation of tissue around any of the dilated tubes. The heart and the other viscera, excepting the kidneys, were natural; they were waxy.

Commentary.—In this case, marked pulmonary symptoms had existed for between two and three years, and by much the most alarming feature was the hæmoptysis, which occurred several times, and often with much severity. Death was, however, ultimately due to another cause, viz., the formation of abscesses round some of the dilatations, the perforation of the pleura, and consequent pneumo-thorax. In this case there was no fetid sputum, and no consolidation of lung tissue.

CASE VI. — *Long-standing Cough — Typhus Fever — Death — Autopsy — Bronchiectasis, with no Consolidation of Lung.*

History.—The patient, A. W., æt. 16, had suffered from cough for some time before she became affected with typhus fever. Under the latter malady she sank rapidly.

Autopsy.—On post-mortem examination, distinct dilatation of several of the bronchial ramifications was observed. It was most marked about the middle of the lung and towards the lateral region.

CASE VII.—*No History of Chest Symptoms—Typhoid Fever—Death—Autopsy—Ordinary Typhoid Lesions, Bronchiectasis.*

A. L., a woman, aged 24, was admitted to the Royal Infirmary on May 7th, suffering from symptoms of typhoid fever. She had been ill for seven days. The nervous symptoms were strongly marked, and after passing into a state of coma vigil, she died on the 12th.

Autopsy.—The body was well nourished, and exhibited all the features of typhoid fever. But in addition there was observed a distinct dilatation of many of the bronchi, those about the middle part of the lung posteriorly being most markedly involved.

Commentary.—These two cases may be appropriately considered together. Both occurred in patients who died of fever. Both in young women, one of whom was known to have suffered for some months at least from cough and spit, but had exhibited no other pulmonary symptoms. There was no particular accumulation of secretion, no consolidation of lung tissue, no traces of tubercle—no morbid condition, in fact, excepting the bronchiectasis.

CASE VIII.—*Bronchitis—Bronchorrhœa—Fetor of Breath and Sputum—Recovery.*

Francis Hackel, æt. 19, a glass engraver, native of Bohemia, but resident in Edinburgh, was admitted to the Royal Infirmary, under my care, 12th December 1865.

The patient stated that at the age of eleven he suffered from inflammation of the lungs, and had ever afterwards been subject to cough. Eight days before admission he had severe rigors and pains in the left side, with increase of cough and expectoration. On admission, he was suffering from a slight attack of pleurisy, limited to the posterior part of the base of the right lung, but throughout both organs there were signs of bronchitis, and the expectoration was copious, purulent, and yellow. He had a most peculiar fetor,—a fetor so disgusting as to nauseate even those well accustomed to the worst odours of a pathological theatre. He was at the same time feverish, and his face wore an anxious expression. His pleurisy subsided under the use of poultices; the feverish symptoms were relieved by diuretics and diaphoretics; but the most singular therapeutic result observed was the complete disappearance of the fetor of breath and sputum, under the use of inhalations of creasote. From that time he gradually improved, and early in February was able to return to his native country in tolerable health.

Commentary.—This case affords, I think, an example of true fetid bronchitis, in which secretion of fetid mucus takes place from the bronchial mucous membrane. It would be unreasonable to assume the existence of gangrene, and there were no physical signs to warrant the opinion that dilatation of the bronchi existed. The rapidity of the beneficial effects following upon the use of the local medication seem all to point to a morbid secretion from the bronchial mucous membrane.

I cannot conclude this paper without expressing my thanks to my colleagues in the Infirmary for the kindness with which they have allowed me to make use of the reports of cases which had occurred under their care, and to my friend Mr Richard Caton for the accurate drawing which illustrates the pathological appearances.

Part Second.

REVIEWS.

The Physiology and Pathology of the Mind. By HENRY MAUDSLEY, M.D. London: Macmillan and Co.: 1867.

WE lay down this book with the greatest respect, feeling it to be the result of an elaborate and conscientious endeavour to arrive at the proper method for the study of mental phenomena. We say endeavour, but the author has gone beyond, he has succeeded in organizing a system of psychology based on principles which every physician must, perhaps unconsciously, have admitted to himself; for whatever system of metaphysics he may have adopted in theory still his every-day practice endorses the principle of Dr Maudsley's book, that the inductive method is the only fruitful one by which to arrive at proper conclusions, that physiology and pathology are the lights by which we must search for knowledge of mental manifestations.

Holding this as the guiding principle, the author has elaborated a system, following in the footsteps of Carpenter, and going beyond him in the elimination of theories, bringing to bear upon his subject deep research, the most carefully weighed argument, and brilliant powers of illustration. In the opening chapter he argues closely against the adequacy of interrogating self-consciousness alone as a method of arriving at conclusions as to mental phenomena, in that it is fallacious and unreliable, as it fails to account for the phenomena of the mental life of the infant, the savage, and the insane, that by it we cannot explain how bodily produce mental conditions, nor how mental produce bodily conditions, and that it ignores the unconscious mental life which underlies every-day existence. He insists on the necessity of the study of the plan of development of mind, of its forms of degeneration, of its progress and regress, as demonstrated by history; which, as he says—"cannot be neglected by one who wishes to be thoroughly equipped for the arduous task of constructing a positive mental science."

In the following chapters, the relation of mind and the nervous system is considered. Avoiding "the crude proposition of Cabanis" on the one hand, and the popular theory of its existence as a metaphysical entity on the other, he proceeds to consider the constitution of nerve-tissue, tracing its development up the scale of animal life, and discriminating between nervous centres, as follows:—1*st*, Primary, or ideational—the grey matter of the brain; 2*d*, Secondary, or sensational—the collections of grey matter that lie between the decussations of the pyramids and the floors of the lateral ventricles; *3d*, Tertiary or reflex—the grey matter of the spinal cord; *4th*, Quaternary—the ganglia of the sympathetic system.

It is then argued that each lower nervous centre is subordinated to the centre immediately above it; and the theory is substantiated by anatomical, experimental, physiological, and pathological evidence. It is held that the ganglionic centres of the spinal cord are the storehouses of reflex action, whether innate or acquired, and that such action is independent of the will; that motor faculties in man are gained by education and exercise; but in animals that there is a transmission of hereditary reflex movements.

In subsequent chapters, the action of the collections of grey matter which exist in the medulla oblongata and the base of the brain, as intervening between the spinal centres and the supreme hemispherical ganglia, is explained in the elimination of sensory-motor movements, both irregular and co-ordinate, which latter may be either primary automatic, or secondary automatic. Sensation is not held to be innate in man, but the result of education. The cells of the grey matter of the brain are looked upon as the centres of ideation, of independent reaction, and of ideo-motor movements, which are not necessarily under the control of the will. A beautiful theory of the probable mechanical actions of the cerebral cells in reflexion, attention, and deliberation, is put forward. Idea, like reflex action and sensation, is not considered as inborn, but acquired. In the following chapters, volition, emotion, actuation, memory, and imagination, are separately considered in their connexion with bodily organization; but it would far exceed our space were we to follow the author through his series of arguments.

Still keeping before him the necessity for regarding all psychical action from a physiological point of view, he is necessarily opposed to the autocratic power of the will, the action of which must depend on the organ by which it is eliminated, and the circumstances which effect its elimination. But we must refer the reader to the book itself for the powerful arguments brought to bear; suffice it to say that, in the main, we fully agree with him—although, in certain passages, his reasoning does not appear to us conclusive, and we confess to occasional great difficulty in following it.

We cannot help feeling what very scant justice is done to this part of the book in the above imperfect resumé. Much original argument must necessarily be left unnoticed; in fact, were it attempted, we feel that we would be doing even greater injustice by pressing into a small space what can alone be appreciated by a careful reading of the book. It is in Part Second that we feel compelled to join issue with Dr Maudsley.

Still, mainly agreeing with him in his first two chapters on the causes of insanity, and on the insanity of early life, we cannot help thinking that he has made but small progress in the classification of mental diseases, the system he lays down being opposed to the principles on which his book is based. Admitting that the present arrangement is vague and imperfect, we fail to understand how Dr Maudsley conceives that he is simplifying matters by anew classing the phases of insanity according to their mental characteristics. He has proved most fully and conclusively, that each mental phenomenon is the result of some organic degeneration—that there can be no change in mind without a causating change in matter; and yet he is content to write the following contradictory sentence:—“What, meanwhile, it is most important to bear in mind is, that the different forms of insanity are not actual pathological entities, but different degrees or kinds of the degeneration of the mental organization, or, in other words, of deviation from healthy mental life; they are consequently sometimes found intermixed, replacing one another, or succeeding one another in the same person.” Up to this point we had imagined that the author's grand object had been to prove that insanity *was* a pathological entity; the reasoning seemed to lead to this conclusion, the natural history of mental symptoms had seemed so well worked out, he appeared to be tending so inevitably to a classification based on the perverted organic conditions he had so ably specified and described, that a feeling of great disappointment was experienced at finding that the only change he proposed in the classification of mental diseases was the establishment of two main orders,—No. 1. Insanity without delusion; No. 2. Insanity with delusion. Now, we would ask Dr Maudsley how “affective or pathetic insanity” can be disassociated from “ideational insanity,” when, by his own admission, one cannot exist without the other? At page 312, he remarks, “As, however, feeling is more fundamental than cognition, the intellectual activity cannot be entirely unaffected, though there may not be any positive delusion: the whole manner of thinking and reasoning is tainted by the morbid self-feeling through which it is secondarily affected;”—so that, by his own admission, it is a mere matter of degree.

Although new names are employed, the proposed classification simply amounts to a distinction between moral and intellectual insanity. In the sentence quoted above, moral insanity is stated to be inseparable from a degree of intellectual insanity, and all who are conversant with the treatment of the insane know well that the first symptom of all insanity is a change of morale. If this classification had been put forward anonymously, no one would have supposed it to have been the proposition of a pathologist, more especially as it takes no cognizance of well-known and universally acknowledged forms of insanity,—such as cretinism, puerperal insanity, or epileptic insanity. As soon as the author descants upon the varieties of insanity, he lapses from the pathologist into the metaphysician, and fails to utilize the practical basis he has so carefully and skilfully established, leaving his work unfinished.

Until each and every case of insanity is regarded as an actual pathological entity, small progress can be made towards a practical classification. The extent of our knowledge does not yet allow of our carrying out such a system in its entirety, but considerable progress has been made in this direction. We have well defined natural orders of insanity,—for examples, idiocy, cretinism, general paralysis, epileptic insanity, puerperal insanity, insanity of tuberculosis, senile insanity,—all of which have been directly proved to be dependent on certain morbid conditions, and are consequently pathological entities; surely it is not necessary to establish a pathological entity that we should be able to put our finger on the actual *materies morbi*. Is cholera not to be considered a pathological entity because we cannot as yet assign an actual cause or demonstrate an actual lesion? It is a pathological entity in that it is an easily recognised and unmistakable departure from health, characterized by almost uniform symptoms, natural history, and termination. In a large proportion of cases of insanity, we have stronger grounds for considering them as pathological entities. Take one instance,—that of puerperal insanity,—here we have a disease undoubtedly dependent on the bodily condition of the patient, and although we do not know in what way the physical disturbance acts on the cerebral cells, so as to produce the mental phenomena, yet we are surely justified in considering it as a pathological entity, and naming it accordingly. By Dr Maudsley's classification, the only name such a case seems to receive is "General ideational insanity, sub-class acute mania,"—a title which conveys no idea, except that the patient is excited, and labours under delusions, and is equally applicable to a case of delirium tremens. Again, we may ask, is general paralysis not an actual pathological entity? As long as we persist in classifying disease which is mainly symptomatized by mental aberration, by the mental symptoms, we are groping in the dark, and groping to no purpose. If, on the other hand, we adopt the plan of investigation so ably advocated by Dr Maudsley, that of inquiring into mental phenomena by the light of physiology and pathology, we are working in the right direction. If we follow up the inquiry by investigation into the causes of such diseases in their relation to the predisposing influences of over-population, physical and moral conditions, religion, education, and social relationships on the masses of humanity, in the individual by weighing carefully the proximate causes of hereditary taint, habit of life, and morbid physical condition, and by patient pathological observation, we shall be able sooner or later to arrive at the only philosophical and correct classification of mental diseases. But as long as we content ourselves by adopting a nomenclature based solely on the psychical phenomena of each individual case, we *burke* inquiry.

However imperfect a system based on the natural history of cases of insanity must at present be, it would soon assume shape if asylum physicians were to direct their attention to the bodily condition of each patient in the first instance, and endeavour to associate it with the mental symptoms in the second. By this means data would, in course of time, be acquired, from which might be eliminated a correct pathology. But as long as they sit down content with calling a case one of "acute mania," whether it is dependent on dissipation, the puerperal state, epilepsy, or other causating influences, they obstruct the road which leads to truth.

Dr Maudsley's book is a long step in the right direction. It is invaluable as a guide to the study of insanity, and will, we believe, do great service towards the formation of a correct classification if his principles are thoroughly carried out. As it stands, it holds a high position amongst works of psychology.

A Treatise on the Practice of Medicine. By GEORGE B. WOOD, M.D., LL.D., President of the American Philosophical Society; President of the College of Physicians of Philadelphia; Emeritus Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc. Sixth Edition, 2 vols. Philadelphia: J. B. Lippincott and Co.: 1866.

DR WOOD'S treatise was first published twenty years ago, and successive editions and reprints have sufficiently attested the esteem in which it has been held. Each re-issue has been brought up to the level of the science of the day; and the sixth edition, now before us, has been elaborated with particular care. Eight years had elapsed since the appearance of the fifth edition, and although the work was twice reprinted in the interval, the author had been unable to afford time for revision. The changes required were therefore more than usually numerous and important, in consequence of the great advances which had been made in the various departments of Medicine during that period. That the author has kept pace with recent progress, is apparent from the new materials introduced into the present edition. Among these, we refer specially to the chapters treating of diphtheria; *petechial fever, including* the *epidemic cerebro-spinal meningitis* at present threatening to extend to this country; heat fever or sunstroke; exophthalmos; and progressive locomotor ataxy. Extensive notes, in small type, are devoted to a description of such subjects as the camp diarrhœa, which prevailed during the late war, trichina disease, acute atrophy of the liver, lymphatic anæmia, ulcerous endocarditis, rheumatic, gouty, and catarrhal pneumonia, aphasia, scrivener's palsy, etc. The use of new instruments is also given; laryngoscope, rhinoscope, use of pulverized liquids, etc.; the sphygmograph being nearly the only novelty omitted. We should have preferred that some of these notes had been incorporated in the text, as the small type is not agreeable to read. We presume that they were used to save space, as the new matter, even in its condensed form, has increased the treatise by about two hundred pages.

Of a work so long and favourably known it is unnecessary to say more than that the present edition fully keeps up its reputation. The chief value of such treatises is that they present, in the form of a compendium, an elaborate and comprehensive view of the present state of medicine. This Dr Wood's book does very successfully. At the same time, it is not a mere compilation of the opinions of others. The materials, carefully selected, and subjected to a critical examination, are explained in accordance with the observations and opinions which the author has derived from a long experience in the practice and teaching of medicine. The descriptions of diseases are most carefully given, and the opinions and practice are carefully considered, and clearly laid down. We cannot always agree with the author, but where we differ we recognise the candour with which opposite views are treated, and the judicious moderation with which the author states his own opinions. The parts from which we are disposed to dissent relate chiefly to the pathology and to some points of practice. Dr Wood is opposed to the more recent views of Virchow and others, and although he takes care to inform his readers of the tenor of the newer doctrines, we do not think that he adequately appreciates recent advances in pathology. And in regard to practice, it appears to us, that although carefully qualified, Dr Wood's recommendation of blood-letting and mercury belongs rather to a former than to the present state of medicine. But on these much debated questions, Dr Wood's independent opinion will be received with respect. We have no hesitation in recommending his treatise as a comprehensive and excellent text-book of the Practice of Medicine.

Supplement to Dr Scoresby-Jackson's Note-book of Materia Medica, containing the Alterations and New Preparations introduced into the British Pharmacopœia of 1867. By ANGUS MACDONALD, M.A., M.D., Fellow of the Royal College of Surgeons, Lecturer on Materia Medica and Therapeutics, at Surgeons' Hall. Edinburgh: Maclachlan and Stewart: 1867.

THIS useful Appendix, after an introduction explaining the changes introduced in the new edition of the *British Pharmacopœia*, just issued, gives an account of the substances and preparations which have been added to the authorized list. Executed on the same plan, and with the same care as Dr Jackson's text-book, the Supplement serves to complete that work, and bring it up to the date of the New Pharmacopœia. As we formerly expressed our opinion, the Note-book will be found an excellent compendium of the Materia Medica.

Part Third.

MEETINGS OF SOCIETIES.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXVI.—MEETING VIII.

13*th March* 1867.—Sir JAMES Y. SIMPSON, Bart., *President*, in the Chair.

Dr Will, of Aberdeen, was admitted as an Ordinary Fellow of the Society.

I. CASE OF COMPLETE INVERSION OF THE UTERUS AFTER DELIVERY.

BY DR INGLIS.

In the beginning of February last, I was called to attend a patient at her first labour. I was told on arrival that she had been quite well till three hours before, when the pains had come on suddenly and with great vigour. She seemed to be a well-made, strong, and healthy woman, but perhaps a little inclined to be of a relaxed habit of body, in consequence of having lived for some time in a hot climate. The character of the pains suggested that the second stage had begun. Examination of the abdomen showed that the limbs of the child were in front, and I thought I could detect the face near the right groin. On examination per vaginam, the os was found to be nearly dilated, and the membranes were stretched tightly over the head. The anterior fontanelle and right ear were easily reached, the ear being near the pubes, so that it was plain that the face really was near the right groin. The head seemed to be pretty large and the pelvis also was above the average size. About half an hour after, the membranes ruptured, and the os had entirely disappeared, while the perineum became distended till a portion of the scalp protruded. The pains continued strong and regular for about three hours, the head being retracted again between each pain; it came gradually round however, and at the end of that time was not far from being in the proper diameter. After this it ceased to progress, and as she had been under chloroform for three hours, I discontinued its use, lest it might be the cause of the delay. The discontinuance of the chloroform, however, did not increase the pains, so, after an hour, it was again given without producing any alteration in their character, nor was the position of the head improved. The forceps were therefore applied, and the head pulled down gently, and rotated into the proper diameter; the head also was detained from retracting during the interval which preceded the next pain. After this, believing that there was sufficient power left to complete the labour, the forceps were taken off and laid aside, and after five or six strong pains, the child was born by the natural efforts. While waiting for the tape and scissors, I noticed some trifling peculiarities in the cord, which was very long, and while looking at it, it became distended in consequence of a strong pain, and I turned the bedclothes aside a little, and saw that the placenta was being expelled. After tying and cutting the cord, I proceeded to lift away the placenta, which was quite beyond the external parts, but found it detained just as might happen when the membranes remain behind. The mass, however, was thicker and firmer than usual; and, when handled, seemed to give great pain, even though the patient was pretty well under the influence of the chloroform. I tried to pass two fingers into the vagina to discover the cause of the detention, and at once recognised the nature of the accident. The cone-shaped mass of placenta, with the funis at its apex, *contained the uterus*, which was completely inverted and expelled beyond the external parts, while the neck of the tumour, which had seemed to a certain extent like the membranes, was a portion of the vagina also inverted, or perhaps the cervix very much attenuated. Part of the placenta was separated, and part morbidly adherent, and there was a little bleeding going on. As the whole mass, consisting of uterus and placenta, was too large to be returned easily, I peeled off the placenta, and then tried to reduce the protrusion. The uterus, when denuded of the placenta, was about the size and shape of a soda-water bottle, and seemed smaller than an ordinary uterus appears to be when felt through the abdominal wall, but when returned into the abdomen it proved really to be smaller than usual. The reduction was rather difficult and tedious. I began first with the cervical portion, but this did no good. The whole uterus was therefore gently compressed, and a depression was made in the fundus with both thumbs, and the pressure was continued for some time. The yielding was very gradual, and the uterus did not lose its tendency to invert till it was entirely replaced from within, and grasped from without. The pulse, when I had leisure to examine it, was 80, the same as it had been a short while before; and the expression of the face was the only thing that seemed to indicate that anything was wrong. She did not awake till all was replaced, and then only complained of some slight after-pains. These ceased in about half an hour, and after that she slept well for five or six hours at once. Two days after, there was great tenderness along the track of the colon, but this was relieved at once when the bowels were opened, nor did it ever cause any constitutional disturbance. About a week after, she had retention of urine for two days, but she had so much dysuria while pregnant, that I can scarcely connect the retention with the inversion. With these trifling exceptions her recovery was good.

Had this been only an ordinary sample of *inversio uteri*, I should not have detailed it at such length, but the peculiarities of the case make it one of great interest. Such extreme inversion with little or no shock is by no means common, nor have I heard of any case where the expulsion was so gradual, or where the resistance to taxis remained after the greater part of the organ had been re-inverted.

There is one point more I should like to draw attention to, viz., the presentation. I have seen or been told of nine cases of more or less complete inversion, and in seven the head presented with the occiput posteriorly, and then came, or was brought, round to the ordinary position before delivery. The other two happened before my informant arrived, so that the presentation is unknown. In like manner, I have collected fifteen cases of violent projective expulsion of the child, and all of these were preceded by the same presentation and subsequent rotation of the head. We also meet frequently with occipito-posterior presentations where, after rotation, the delivery is unusually short. I have only been able to ascertain the presentation in two out of three cases of hour-glass contraction, and in both the occiput was posterior and came round before delivery. The third happened after the child had actually been *thrown* to the foot of the bed, and the cord broken by a strong pain. The medical attendant was just entering the house when this took place, so that the presentation was not ascertained.

I may also add, that though these cases I have referred to are not numerous they are all I have been able to hear of, and I have not been able to hear of any similar ones where the presentation was *not* occipito-posterior; in fact, from all I have gathered, the only ones that could by any possibility have been exceptions to the rule are the two of inversion which occurred before the arrival of my informant, and the one of violent projection and hour-glass contraction, just related, which also took place before examination.

From a careful consideration of these cases, I am inclined to believe that in them the rotation of the head led to the inversion. By rubbing round against the inner surface of the cervix, the head produces an excessively complete and extensive dilatation, and in time it also brings on an increased expulsive action, which may become inordinate. In fact, it produces much in the same manner, but to a greater extent, the same results which we expect to follow manual dilatation. The increase of the protrusion, produced by the altered position of the head, must also be an additional stimulus to expulsive action. If, then, expulsive action should come on in such a case before the cervical portion of the uterus has regained its tone, either hour-glass contraction or inversion of the uterus will certainly follow.[1]

Dr Husband mentioned one case of inversion of the uterus which had occurred in his practice—first child. The labour was long and difficult, the face towards the pubes, and the forceps were used. The placenta was easily peeled off and the uterus re-inverted without difficulty. The patient made a good recovery. Traction had been made upon the cord, but not severe. The presentation was occipito-posterior.

Sir J. Y. Simpson observed that the attention of the profession was first strongly called, by Dr Radford of Manchester, to the possibility of the uterus becoming inverted spontaneously by the muscular contraction of the fundus of the organ, assisted by the abdominal muscles and diaphragm, whilst the fibres of the os and cervix uteri were greatly relaxed. Certainly it occasionally occurred without any traction at the umbilical cord, or any mechanical pulling down of the fundus. In one or two cases where labour had come on after the death of the mother, and no one was present in the dead-room, the uterus had become inverted after the expulsion of the child. Dr Inglis had spoken of seeing cases of inversion of the uterus occur. Sir J. Y. S. had never seen a case occur, and hence he thought the displacement much rarer than Dr I. supposed; but he (Sir James) had seen several cases of inverted uterus days, weeks, and months after the accident had happened. He had, in some of the instances, succeeded in re-inverting the inverted uterus, by steady pressure upwards upon the fundus of the displaced organ, the patient at the same time being chloroformed. He was certain that in some, if not in all cases where a chronically inverted uterus was thus replaced, a fissuring or split occurred in the cervix uteri, or at the point of inversion. In one instance he felt the fissuring with the finger, and it seemed to extend through all the coats of the organ; but in this, as in other instances, the patient made an uninterrupted and perfect recovery. In one case, which he saw with Dr Keiller, where inversion occurred in consequence of disease, and not of the puerperal state, both Dr Keiller and he failed in reducing the organ, and in that instance it had become a question whether an incision of the cervix to imitate the fissuring would not allow of the replacement of the displaced fundus uteri. Possibly, in such chronic cases, it may yet also be found that an instrument can be passed through the inverted fundus or body of the uterus, so as to reach the site of the peritoneal contraction at the point of inversion, and mechanically and straightway dilate it so as to admit of the return of the fundus of the organ. Any dilator would need to be a metallic one, without any cutting edge, and might be passed through an orifice in the fundus or walls made by a trocar or knife. Perhaps it would be found safer than the removal of the inverted fundus by the ligature or knife, as if it were a polypus, an operation which had been successful in the hands of Dr Johnson and others.

Dr Keiller considered Dr Inglis' case in several respects a very unusual one, it was a first child,—inversion of the uterus generally occurring in subsequent confinements, and in cases where the uterus is irregularly contracted, some fibres being in a complete state of inertia, while others were more or less suddenly contracted. He had never seen a case of acute inversion of the uterus except one. He, however, had met with chronic cases, one in St Andrews, which could not then be, and has not yet been re-inverted. He said that Dr Wilson of Glasgow had removed an inverted uterus, which he (Dr K.) had in his museum.

Dr Moir asked whether combined inversion of the uterus and vagina could occur without rupture of the lateral ligaments.

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[1] In revising the above paper, the remarks regarding the presentation have been more fully worked out; and I consider myself indebted to the paper read by Dr Matthews Duncan for attracting my attention to the identity of the causes producing hour-glass contraction and inversion, which had not previously occurred to me.

Dr Handyside thought that the relaxation of the parts during gestation might allow inversion to take place without laceration of the ligaments.

II. A RARE FORM OF PRESENTATION.

Dr Wilson said that he had recently had a case where the face presented to the right groin, but which turned itself.

Sir J. Y. Simpson said that the face to the right groin occurred with Naegele only in 1 in 1200 cases.

III. CASE OF ACRANIA. BY DR WILSON.

Dr Wilson showed an anencephaloid fœtus, of which a patient of his had been delivered on Saturday last. He said that it was not so much on account of the rarity of such cases that he brought it before the Society, for they were by no means very rare, and this was the second case of the kind he had met with in his practice, but he considered it interesting in other respects, first, as being an instance of the recurrence of malformation, though of a different character, in successive children of the same parent. The previous child, a male, having a hare-lip and a cleft palate. The mother had previously given birth to two girls, who are living, and without deformity. The parents themselves are also free from it. The case was also interesting, as he believed it to be an illustration of prolonged gestation. The patient menstruated last in the middle of March 1866, having been previously quite regular for several periods, and quickened in the middle of August, and had expected to be confined in the end of December, but was only delivered as stated on the 9th instant. Of course, the case is liable to the same objections and sources of fallacy referable to all similar cases; still, considering the large size of the child, the probability was great that it was really a case of gestation prolonged to between ten and eleven months. There was great difficulty in extracting the shoulders, and the child was born in a partially asphyxiated state, and only survived a few minutes, after making five or six ineffectual attempts at respiration. The child, he might state, presented by the head, and he had no difficulty, after the rupture of the membranes, in making out the precise nature of the case, though the tumour on the head had very much the feel of the scrotum; and he could quite conceive an inexperienced or careless observer mistaking it for a breech case, though the absence of the other characteristics of such cases would naturally excite suspicion, and a more accurate examination ought to leave no doubt as to its nature.

Dr Handyside remarked that Dr Wilson's case was interesting in the fact that, of the four children whom the mother, aged 30, had had, the two first were perfectly-formed females, the third a male with hare-lip and split palate, and the fourth a female presenting that state of malformation usually named acrania. This child was well nourished: very large and heavy, as some acranial infants are; and, as usual with such monsters, the head was well covered with hair.

Dr H. did not, however, consider this head-monstrosity as a true instance of the acrania of J. F. Meckel, inasmuch as the occipital-vertebral segment of Huxley is in the present case complete; its supra-occipital portion being reflected forwards, downwards, and then backwards, enclosing in its duplicature a little areolar tissue. The parietal segments are deficient, mesially, above their protuberances; and the frontal segment is deficient above the line of its usual protuberances. He regarded this rather as another instance of such arrested development of the vault as may be better classified as *fissure of the skull*, after Vrolik's arrangement, and perhaps be accepted as a good example of a contribution towards an additional *and fourth type of arrested development of the tissue of the cranium with absent brain.* In Vrolik's third type the foregoing features are absent; but all the other features,—as regards (1.) the presence of the cerebral nerves; (2.) the surface of the basis cranii being only partially denuded; and (3.) an efflorescent spongy mass (consisting of empty cellular sacs which represent the malformed brain closely applied to the summit of the spinal cord) protruding through the scalp immediately in front of the occipital bone,—bear a close resemblance to his definition of that type.

A hydrocephalic origin followed by disruption—the commonly assumed cause of fissure of the skull—could not, in Dr H.'s opinion, be accepted as explanatory of this particular form of congenital deficiency. The existence of the cellular sacs upon the basis cranii does in no wise lead to the inference that hydrocephalus had existed at an anterior date; for Vrolik states that he found, in a fœtus at the second month, the vault of the cranium absent, and the place of the brain occupied by a similar spongy substance to that found in Dr Wilson's case.

Sir J. Y. Simpson considered the case one of prolonged gestation. Vitality has been preserved in some cases of anencephaly for a little time. He (Sir J.) said that, along with Dr Williamson of Leith, he had seen a case of anencephalous fœtus where the child lived for twelve days. The annular body was present, otherwise the encephalon seemed entirely absent.

Dr Keiller had seen a case of this kind two years ago. The child sucked and swallowed and lived for six hours. If the tumour on the head was pressed, especially from above downwards, the child became convulsed.

IV. A FEW NOTES OF A COUNTRY OBSTETRIC PRACTICE. BY DR THOMSON, CHESHIRE. COMMUNICATED BY DR STEPHENSON.

At the request of the members of this Society, I have much pleasure in jotting down a few remarks on my experience in obstetric practice, in a country district in Cheshire. They must, of course, be crude and desultory, as they are written from memory, and without the advantage of notes or case-book to refer to. But this is of less importance, as my record is more of easy and natural labours than of confinements with serious complications.

During nearly eighteen years' residence in Wrenbury, I have attended above 2200 cases of midwifery, on an average above 120 each year, and out of that number I have had no fatal case. Two deaths have occurred, but neither would be reckoned as death from puerperal causes in strictly-kept statistical tables. In the first, I had given up attendance at the usual period for doing so in country practice when nothing serious has intervened, some ten or twelve days after confinement; and it was not till the end of the third week that the patient, after being exposed to a cold draught for some hours on a winter's day, was seized with peritonitis. The illness at first yielded to treatment, but afterwards typhoid symptoms came on, and she sank five weeks after delivery. In the second case, the patient was within six weeks of the full term of pregnancy; she was suffering from disease of the liver, prostrated by incessant sickness, and at last was evidently sinking. I then ruptured the membranes in the hope of saving one life, that of the child, and accomplished delivery an hour before the mother's death; that child has grown to be a strong healthy girl.

The most remarkable thing in my practice has been the paucity of preternatural presentations, and the little instrumental interference required. All the presentations have been natural except, I think, five. One where both arms were in the vagina when I first saw the patient; in the others one arm presented. In the first-mentioned case, I did not experience any unusual difficulty in turning, and the mother did well, but the child was dead. In one of the other cases, I found that the arm had been protruded for two days, and the uterus was so strongly contracted over the child that all my attempts to reach a foot were in vain. Large doses of opuim to stop the labour pains, and afterwards chloroform did not make the matter more easy, so, as the child was evidently dead, I removed the presenting arm at the shoulder and was then able to reach the foot and deliver. This patient, after a very tedious illness of three months, regained a state of robust health. Out of the five cases, three of the children were dead, two of them alive.

I have also only required to deliver by forceps three times; and in each case, more from deficiency of expulsive power than from largeness of the head or contraction of the pelvis. In all, both mothers and children did well.

The most serious and frequent complication I have met with has been placenta prævia, and of this I have had fifteen cases, either partial or complete, at the full period of gestation; and in one of those women the same thing happened afterwards four times in succession at the sixth or seventh months of pregnancy. In one case the breech presented; in all the others the head was the presenting part. In only one of these have I turned, and all the mothers have in the end done well; but in the whole number I only saved the lives of two of the children. In one case, during my absence from the house for a few minutes, I found the placenta had ruptured and the child's head was passing through the rent. I gave a large dose of ergot, pressure of the head of course prevented hæmorrhage, and the case speedily ended in a favourable manner. Probably, from not interfering so long as nature seems capable of accomplishing her work, the duration of labour in my practice may be longer than in the general average, yet it is seldom that I need to remain many hours with my patients. I am able to judge with some accuracy the probable length of time that is likely to be required, after making two examinations; and if the case is threatening to be tedious, I generally leave, and return before labour has advanced too far. I give ergot freely, in the great majority of cases, and have seldom been disappointed in its action. In proof that what some may call needless delay has not acted injuriously, I have had no case of sloughing from long-continued pressure of the head and no fistula, nor perineal rupture to any extent. In one case there was a decided stretching or tearing of the sacro-iliac ligaments; it was a case where, soon after being sent for, I tried to apply the forceps, but from impaction of the head, I could not pass the blades without danger of injuring the soft parts. As the woman was strong and the child alive, I trusted to nature and to ergot, and, after a tedious attendance of nearly twenty-four hours, a living child was born, even after repeated doses of ergot, administered many hours before the birth. It was some weeks before that girl was able to walk, but since that time she has had several children, with easy confinements, and good recoveries. I have attended two girls so young as fifteen, and one primapara of forty-nine years.

Beyond these remarks there does not seem much more to record. In general, my patients have made good and rapid recoveries, but I have had many anxious cases. I have had four of puerperal mania of a very severe character, besides several of apparently hysterical mania, and at one time I feared I should have to decline practice owing to puerperal fever. Thirteen successive cases occurred, all taken on the third day after delivery, but varying much in the particular symptoms. If true puerperal fever, it is remarkable that all recovered; but if not, it was a strange coincidence that during that time not one whom I attended escaped the seizure till thirteen had suffered, and that as suddenly as the inroad had occurred, so suddenly and entirely did it disappear.

In closing this communication I would remark, that the healthy state of the inhabitants of Wrenbury, and the position and occupation of the females, must strongly conduce to the favourable results here noted. There is very little abject poverty among the labouring classes; the females do not work in the fields, but are solely occupied with their home duties, and there are no manufactories to draw them from home to sedentary occupations. And the better classes live in comfort but not in luxury; so their constitutions are not injured by a pampered mode of life.

In looking over these "recollections," I may perhaps be misunderstood in what I have stated about natural presentations: in this I include breech and footling cases, and all others that can be terminated without turning. Of these classes I have had a considerable proportion, but cannot here state how many. I must again ask forbearance for the unconnected style of this communication. It has been written at a distance from home, and in the sick-room of a near relative, which, with the absence of notes to assist my memory, may be accepted as some apology.

V. *Drs Main* and *Charles Bell* exhibited some new Instruments for the Extraction of Intra-uterine Polypi.

Sir James Simpson approved of Dr Main's suggestion, but feared there might be some difficulty in removing the claws from the tumour, if such were found necessary.

VI. *Dr Main* showed the Society an ingenious simple Chloroform Inhaler.

VII. *Dr Handyside* exhibited a very beautiful new Transfusion Apparatus, designed by himself after the experience of two successful cases of transfusion by means of the usual apparatus. This new apparatus, *simplifies*, he thinks, the procedure very much, and lessens the risk of *coagulation* of the stream of blood in its course to the patient's arm. It consists of a grooved narrow lancet, along which Dr H. carries a curved obliquely-cut nozzle into the vein of the patient; and then he propels the blood along this nozzle by the action of a short wide syringe applied directly to the nozzle; *the usual intermediate tube* being dispensed with.

Part Fourth.

MEDICAL NEWS.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

MINUTES OF MEETING, *Wednesday, May* 29, 1867.

Present—Dr Burrows, *President*, in the chair; Mr Hawkins, Mr Cooper, Dr Acland, Dr Paget, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Dr Fleming, Mr Syme, Dr Thomson, Dr A. Smith, Mr Hargrave, Dr Leet, Dr Apjohn, Sir D. J. Corrigan, Bart., Dr Sharpey, Dr Parkes, Dr Quain, Mr Rumsey, Dr Christison, Dr Stokes. Dr Francis Hawkins, *Registrar*.

Dr James Risdon Bennett took his seat as member for the Royal College of Physicians of London.

The following Committees were appointed:—

Business Committee.—Dr Andrew Wood, *Chairman;* Dr Embleton, Dr A. Smith, Mr Cæsar Hawkins, Mr Rumsey.

Finance Committee.—Dr Sharpey, *Chairman;* Dr Quain, Dr. A. Smith, Dr Fleming, Mr Cooper.

The President addressed to the Council a review of the principal events which had passed during and since their last session, especially of the efforts of the Council to improve the education and examinations, general and professional, of Medical Students. He referred also to the registration of Students, and to the continuance since the last session of the Visitation of the Examinations of the Qualifying Bodies. He then described the course which the Executive Committee had pursued in the discharge of the duty delegated to it of pressing on the Government the proposed Bill for the Amendment of the Medical Acts, and gave an account of the interviews and correspondence which he had with Mr Walpole; and concluded with laying before the Council the following letter from Mr Walpole, together with the proposed clause which accompanied it, for the "Registration of Foreign and Colonial Practitioners."

Dr Burrows. 109 Eaton Square, May 20, 1867.

My dear Sir,—Immediately after your last interview with me, on the proposed amendments to the Medical Act, I placed the papers in the hands of the Home Office Counsel, with directions that he should, if possible, devise some mode of carrying into effect the objects which I understood the Medical Council had in view, without placing what might be deemed undue restrictions on eminent foreign schools of medicine.

The pressure of business upon him was so great, that he could not, without great inconvenience, attend to the subject then, and I am sorry to say it escaped my recollection that he had not sent me an answer.

I must remind you that the difficulties which have arisen in respect of this Bill are in no degree chargeable to the Home Office, but they arise from the fact that the Medical Council had deviated from the form of clause XI., as settled last year by that office.

Should the Medical Council be willing to adopt, in place of clause XI., the amended clause that accompanies this letter, I do not think that the Government would offer any opposition to the Bill; but as the Bill is not a Government Bill, I must express my concurrence with the opinion expressed by Sir George Grey, contained in Mr Murdoch's letter of the 14th of May 1866, that it would be well for the Medical Council to intrust the Bill to some independent member.—Believe me, etc., S. H. WALPOLE.

To be substituted for Clause XI., proposed by the Medical Council.

" Every person who has resided in the United Kingdom for a period of not less than twelve months immediately previous to making his application, and who legally possesses a colonial or foreign degree, license, or other diploma, from a University, College, or other body, which qualifies him to practise Medicine or Surgery in the colony or foreign country where such degree, license, or other diploma was obtained, shall be entitled to be registered under the Medical Act (1858): provided such degree, license, or other diploma shall have been granted by a University, College, or other body which, in the opinion of the Medical Council, or of one of Her Majesty's Principal Secretaries of State, grants degrees, licenses, or diplomas, after such course of study and examination as guarantees the possession by the holder of sufficient knowledge and skill for the efficient practice of Medicine and Surgery."

On the motion of Dr Paget, seconded by Dr Quain, a committee was appointed to consider Mr Walpole's letter, and to draft a reply; the same committee being requested to report to the Council on the steps to be taken hereafter with reference to the amendment of the Medical Acts.

Moved by Dr Fleming, seconded by Dr Alexander Wood, and agreed to,—"That it be remitted to the Executive Committee to consider the whole form of procedure which has hitherto been followed in conducting the business of the Council; and to report, on the first day of next session, any alterations which, in their opinion, would tend to expedite the transaction of business."

MINUTES OF MEETING, *Thursday, May* 30, 1867.

Dr Burrows, *President*, in the chair.

1. On the motion of Dr Alexander Wood, seconded by Dr Storrar, and agreed to, a committee was appointed to report during the present session how the Council can best deal with the whole subject of Preliminary Examination. The committee to consist of Dr Alexander Wood, *Chairman;* Dr Christison, Dr Sharpey, Dr Embleton, Dr Acland, Dr Stokes, Dr Storrar, Dr Thomson.

CASE OF MR FORMAN.

Mr Ouvry, the Solicitor to the Council, read the following summons, which had been sent to John Forman, of Fettercairn, in the county of Kincardine:—

Gen. Council of Med. Edn. and Reg., London, May 1867.

Sir,—A statement having been submitted for the consideration of the General Medical Council, purporting to show that your name was entered on the *Medical Register* as a Member of the Royal College of Surgeons of England, in consequence of an affidavit made by you on the 21st day of January 1859, in which you falsely swore that you were the person described as a Member of the Royal College of Surgeons of England, in a diploma dated 22d October 1853; I have to inform you, that on Thursday, the 30th day of May instant, at three o'clock in the afternoon, the General Medical Council will meet at the Royal College of Physicians, in Pall Mall East, London, and will then and there institute an investigation into the truth of the said statement, with the view to decide whether your name ought to be erased from the *Medical Register*, on the ground that the entry was fraudulently or incorrectly made.

At that investigation you are hereby invited and requested to be present. You will also take notice that the meeting of the Council is fixed peremptorily for the day and hour hereinbefore named, on which day and at which hour the inquiry will be prosecuted, whether you attend or not.—Yours, etc.

FRAS. HAWKINS, M.D., *Reg. G. M. C.*

The answer returned to the foregoing summons was read, as follows:—

Dr Hawkins, *Registrar*. Fettercairn, 27th May 1867.

Sir,—If I were to attend the meeting of Council, as requested, on the 30th instant, I would, as I have already stated, be without any evidence in my favour. I have no one to bear me out. All that I can suggest is, that a mistake may have occurred in recording the date of the diploma. I must therefore bow to the decision of the Medical Council. I only beg to be permitted to register another qualification in July next.—I am, &c.

JNO. FORMAN.

Mr Ouvry stated the evidence in support of the charge contained in the summons.

Moved by Dr Paget; seconded by Mr Hawkins; and agreed to:—"That the name of John Forman be erased from the *Medical Register*, it having been proved to the satisfaction of the Council that the entry of his name was fraudulently made."

REPLY TO MR WALPOLE'S LETTER.

2. Dr Paget, as Chairman of the Committee appointed yesterday to consider Mr Walpole's letter, and to draft a reply, presented the draft of a letter, to be sent by the President to Mr Walpole, as follows:—

Gen. Council of Med. Edn. and Reg., London, 30th May 1867.

My Dear Sir,—I have laid before the General Medical Council your communication dated May 20th, containing the draft of a clause which you propose should be substituted for Clause XI. of the draft Medical Acts Amendment Bill, and expressing the opinion that, if the Medical Council be willing to adopt the clause in the form proposed, the Government would not offer any opposition to the bill; but that it would be well for the Council to intrust the bill to some independent member.

The Council hope that you will be pleased to reconsider this intimation.

The Medical Act of 1858 was introduced into Parliament, and carried, as a Government measure and public act. Since then four successive acts have been passed for its amendment, all of which in like manner were introduced and carried by Government. Subsequently the Medical Council became satisfied that the Medical Act failed to effect one of its main objects; and for correcting this and some other defects they proposed an amendment bill. Sir George Grey, at that time Home Secretary, suggested that the bill should be introduced by some independent member of Parliament, for the following reason, viz., that he did not feel able to undertake the charge of the bill at that time, "owing to the number of bills which the Government had before the House of Commons, the progress of which was delayed from day to day from the want of opportunity to advance them."—(See Mr Murdoch's Letter of May 14, 1866.)

But the Council, in reference to the above communication, unanimously resolved, on May 29, 1866: "That the Medical Council are of opinion, that unless the bill be introduced by the Government it would be unadvisable to proceed with it."

The reasons which induced the Council to come to this decision remain in full force. The Medical Acts, as already said, were Government Acts; the Medical Council, which brings the subject under your consideration, is a public body, established by Act of Parliament, and placed in communication with the Privy Council: six of its members are nominated by the Crown, and the rest by great public bodies. The essential part of the draft bill relates to a matter affecting not merely the medical profession, but in a larger and more serious degree the welfare and interests of the general public.

To these reasons it may be added that were the Government, which has hitherto introduced every bill for amending the Medical Act (1858), to decline the introduction of the bill now contemplated, the announcement would, in the opinion of the Council, be fatal to its success.

The Council understand that the only point in the draft Amendment Bill as to which the Council and you are not agreed, is that which relates to the admission of Colonial and Foreign Graduates and Licentiates to the *Medical Register*.

The Council have had under their consideration the draft clause which accompanied your letter.

The Council are unanimously of opinion that the provisions of this clause are so objectionable, that they could take no part in the promotion of any bill which should contain it, for this reason, among others, that it proposes to give to one of Her Majesty's Principal Secretaries of State the power of directing the registration of foreign and colonial degrees and diplomas, independently of the Medical Council—one of whose most important and responsible duties it is to regulate the registration of qualified medical practitioners.

In conclusion, allow me to draw your attention to the fact, that the Medical Council is now holding its annual session; that the session cannot be prolonged for many days, without extreme inconvenience to many of its members; and that it is its earnest desire to have a conference with some member of the Government. May I therefore request the favour of a reply at your earliest convenience, and that you would inform me with which member of the Government you would desire me to communicate in your absence from London.

G. BURROWS, *Pres.*

After several amendments, it was agreed, on the motion of Mr Rumsey, seconded by Dr Paget:—"That the following words—'and might convey to the public an incorrect impression as to the relations of the Council with the Government'—be inserted after the paragraph ending 'fatal to its success.'"

Dr Christison then took the chair, at the request of the President. A motion by Dr Andrew Wood, seconded by Dr Parkes, in regard to professional study, was deferred for further consideration till next day.

MINUTES OF MEETING, *Friday*, *May* 31, 1867.

Dr Burrows, *President*, in the Chair.

1. The Council resumed the adjourned consideration of Sir D. J. Corrigan's motion, viz.—"That it is not advisable to enter on the consideration of what ought to be the course of professional study to be gone through by all persons seeking entrance into the medical profession," which had become a substantive motion, after having been carried yesterday as an amendment on Dr Andrew Wood's motion, viz.—"That a committee be appointed to consider and report upon the minimum of professional study to be gone through by all persons seeking entrance into the medical profession, in order to secure the possession by them of the requisite knowledge and skill for the efficient practice of their profession."

Amendment, moved by Dr Bennett, seconded by Dr Fleming,—"That the

Council having decided what should be the extent and character of the Preliminary Examination, it is incumbent upon them to consider and report on the amount and character of professional study absolutely necessary for securing the possession of the requisite skill and knowledge by all persons seeking entrance into the medical profession, and that a committee be appointed for that purpose."

The amendment was *negatived*,—majority 11: The President, Mr Hawkins, Dr Storrar, Mr Syme, Dr Smith, Mr Hargrave, Dr Apjohn, Sir D. J. Corrigan, Bart., Dr Sharpey, Mr Rumsey, Dr Stokes. Minority 10: Dr Bennett, Dr Acland, Dr Paget, Dr Embleton, Dr Alexander Wood, Dr Andrew Wood, Dr Fleming, Dr Thomson, Dr Leet, Dr Parkes.

Second amendment, moved by Dr Quain, and seconded by Mr Syme,—"That a committee be appointed to consider and report to this Council what are the subjects without a knowledge of which no candidate should be allowed to obtain a qualification entitling him to be registered."

The amendment was carried, and having been put as a substantive motion, was agreed to. The committee to consist of the following members:—Dr Quain, *chairman*, Dr Bennett, Mr Hawkins, Dr Storrar, Dr Andrew Wood, Mr Syme, Mr Hargrave, Dr Sharpey, Dr Stokes.

2. Moved by Mr Hawkins, seconded by Dr Paget, and agreed to,—"That the Reports of the Visiters of Examinations be received and entered on the Minutes, and that a copy be sent to each of the bodies named in Schedule (A) to the Medical Act."

Dr A. Smith drew the attention of the Council to the circumstance that the Reports of the Visitations of Examinations, which by direction of the General Council had been marked "Confidential," had been commented upon in one of the public journals; whereupon the President addressed the Council on the importance of a strict adherence to the wishes and directions of the Council.

3. Moved by Dr Andrew Wood, seconded by Dr Parkes, and agreed to:—"That the Reports of the Visitations of Examinations during the past two years be referred to a Committee, whose duty it shall be to go carefully through them, and to bring before the General Medical Council, during their present session, a Report embodying such recommendations, founded on the various suggestions made by the Visiters, as may tend to improve generally the examinations for the license to practise Medicine and Surgery, and to remedy the defects in particular examinations which have been pointed out by the Visiters." The Committee to consist of Dr Andrew Wood, *chairman*, Mr Hawkins, Dr Paget, Dr Storrar, Dr Thomson, Dr Leet, Dr Apjohn, Dr Sharpey, Dr Parkes, Dr Christison.

Moved by Dr Paget, seconded by Dr Thomson, and agreed to:—"That it be an instruction to the committee to report as to the best means of supplying the few omissions in the Reports of Visitations of Examinations now received."

Moved by Dr Alexander Wood, seconded by Dr Parkes, and agreed to:—"That a committee be appointed to prepare a scheme for the Visitation of Examinations of next year, and especially to consider the best means of supervising the Arts Examination." The committee to consist of Dr Alexander Wood, *chairman*, Mr Cooper, Dr Acland, Dr Embleton, Dr Fleming, Mr Syme, Dr A. Smith, Dr Quain.

During the discussion on the foregoing motion, the President being obliged to leave the meeting, Dr Acland took the chair.

4. Moved by Dr Embleton; seconded by Dr Storrar, and agreed to:—"That a committee be appointed to report upon—1*st*, The Registration of Medical Students. 2*d*, The Returns from the bodies in Schedule (A) of Professional Examinations and their results." The committee to consist of Dr Embleton, *chairman*, Mr Hawkins, Dr Fleming, Dr Thomson, Dr A. Smith, Dr Andrew Wood, Dr Sharpey.

MINUTES OF MEETING, *Saturday, June* 1, 1867.

Dr Burrows, *President*, in the Chair.

Dr Quain handed in a report from the Pharmacopœia Committee.

1. The Council resumed the consideration of the Report of the EXECUTIVE COMMITTEE on the subject delegated to them on the 16th of August 1866. After amendments, the following is the report:—

(1.) That the Executive Committee should consider and prepare reports upon any subjects that may suggest themselves to them as requiring the attention of the General Council. (2.) That such reports should be printed and circulated among the members of the General Council, at least one fortnight before its meeting. (3.) That the Branch Councils be requested to transmit to the Executive Committee the Reports of the Visitations of Examinations, at least a month before the meeting of the General Council, in order that they may be printed and circulated confidentially among the members of Council. (4.) That the Executive Committee meet before the annual meeting of the General Council, in order to prepare and arrange the business for the consideration of the Council.

Moved by Dr A. Smith, seconded by Dr Leet, and agreed to,—"That the resolutions respecting the Executive Committee which have been adopted be incorporated with the Standing Orders."

2. *Read*—The reports of the Branch Councils on the subject delegated to them on the 29th May 1866.

Moved by Dr Andrew Wood, seconded by Dr Parkes, and agreed to—"That, in accordance with the decisions of the Branch Councils, no alteration be made in the heading, 'Place of Medical Study.'"

3. Moved by Sir D. J. Corrigan, seconded by Dr Paget, and agreed to—"That the following letter, addressed by the President of the British Medical Association to the President of the Medical Council, and the accompanying resolutions, be received and entered on the Minutes."

To Dr Burrow. 40 Brook Street, 31st May 1867.

My Dear Sir,—As president of the council of the British Medical Association, it is my duty to transmit to you a copy of resolutions passed at the Committee of Council of the Association on the 28th instant.

The object of the Committee of the Association in passing the first and second resolutions is to support the General Medical Council in their efforts to amend the Medical Acts, and in their endeavours to improve medical education.

With regard to the third resolution, I have simply to recommend it to the attention of the Medical Council in framing the proposed amended Act. I believe that the opinion expressed in this resolution is widely entertained in the profession.

As soon as the Medical Amendment Act is before Parliament, it will be my duty, in accordance with the second resolution, to prepare a petition from the Committee of Council of the British Medical Association in support of it.—I have, etc. FRANCIS SIBSON, M.D.

MEETING of Committee of Council of British Medical Association, held at Birmingham, May 28th 1867.

(1.) Proposed by Dr E. Waters, president of the Association, and seconded by Dr Falconer, treasurer of the Association—"That this committee considers that it is of the greatest importance that the British Medical Association should support the Medical Council in its endeavour to amend the Medical Act, and to improve medical education; and this committee trusts that the various branches of the Association will take the subject of the Medical Acts Amendment Bill, about to be proposed by the Medical Council, into their consideration, and give it their support, by means of petitions to the Legislature and representations to her Majesty's Government."

(2.) Proposed by Dr A. T. H. Waters, and seconded by Mr. Clayton—"That a petition be forwarded to both Houses of Parliament from this Committee, and a representation be made to Government, in support of the Medical Acts Amendment Bill, when prepared by the Medical Council,—to be signed by the President of the Council on behalf of this committee."

(3.) Proposed by Mr. Husband, and seconded by Dr Simpson—"That in any alteration of the Medical Act, the constitution of the Medical Council ought to be re-considered, so that the great body of the profession should be fairly represented."

T. WATKIN WILLIAMS, *Gen. Sec.*

5. *Read*—A communication from the Chancellor of the University of Melbourne, addressed to the President of the General Medical Council, with the object of obtaining the recognition of the degrees granted by that University.

MINUTES OF MEETING, *Monday*, *June* 3, 1867.

Dr Burrows, *President*, in the Chair.

1. REPORT OF THE PHARMACOPŒIA COMMITTEE.

The Pharmacopœia Committee, in completing the duty assigned to them, have to report that the final revision of the Pharmacopœia was completed at the end of March during the present year, and that the revised copy was forthwith placed in the hands of the Executive Committee, by whom the work has since been issued to the public.

The committee beg to report that in the progress of the work they have endeavoured to limit the expenditure on its production, so far as was consistent with its completeness, its accuracy, and perfection. The amount of this expenditure has been £676, 14s., composed of the following items:—

Editors, ...	£550	0	0
Pharmaceutical investigations, ...	100	0	0
Expenses of attendance of Member of Committee from Ireland, ...	25	4	0
Postages, Messengers, Parcels, French Codex, etc.,	1	10	0
Total, ...	£676	14	0

The committee, reminding the Council that the sum of £300 was placed at their disposal in 1865, have now to ask that the treasurers be authorized to pay the further sum of £376, 14s.

Having thus brought their labours to a close, the committee have the satisfaction of testifying to the very valuable services rendered by Professor Redwood in the preparation of the work, to his zeal and his ability, not less than to the readiness with which he gave attention to the suggestions and recommendations of the committee. They have also to acknowledge the valuable assistance rendered by Mr Warrington, so far as the state of his health enabled him to co-operate with the committee; acknowledgments are further gladly offered by the committee, for the assistance afforded them in the revision of the work, not only by members of the Council, but also by the several eminent scientific gentlemen to whom the work was submitted before its publication.

The committee feel that it will not be thought inconsistent with their duty, to indicate the plan which seems to them the most desirable for watching over the progress of Pharmacy, and for making such additions and corrections as would facilitate hereafter the preparation of the next edition of the *British Pharmacopœia.*

They would therefore suggest that a committee, constituted like the present, should be appointed for the purpose just indicated, and that the sum of £50 be placed annually at their disposal to enable them to obtain such assistance as they may think necessary.

May 31, 1867. R. CHRISTISON, *Chairman.*

Moved by Dr Quain, seconded by Dr Storrar, and agreed to:—"That the report of the Pharmacopœia Committee be adopted, with the addition of the following words after the word 'report,' in the third line of the first paragraph: 'That in accordance with the resolution of the Council, 26th May 1866, the Pharmacopœia was submitted to each member of the Council (on 1st February 1867).'"

Moved by Dr Andrew Wood, seconded by Dr A. Smith, and agreed to:—"That a sum of £500 be voted to the members of the Pharmacopœia Committee for their great services in preparing the edition of the *British Pharmacopœia* for 1867."

Read—Communications from the University of Calcutta; the University of Sydney; the President and the Registrar of the Medical Council of Upper Canada, relative to the recognition of their degrees and diplomas; and from the M'Gill University, Montreal, praying for recognition of its matriculation examinations.

2. Moved by Sir D. J. Corrigan, seconded by Mr Hawkins, and agreed to:—"That letters be addressed to the University of Melbourne (Minutes, June 1), the University of Calcutta, the University of Sydney, and the Registrar of the Medical Council of Upper Canada, informing them that at present it is not legally in the power of the General Medical Council to recognise colonial degrees; but that an amended Medical Bill is now engaging the attention of the General Medical Council, and that the recognition of the colonial degrees and licenses referred to shall receive full consideration."

3. Moved by Dr Andrew Wood, seconded by Dr Parkes, and agreed to:—"That the communication from the M'Gill University, Montreal, be referred to the Committee on Preliminary Education."

4. *Read*—A letter from Dr Geo. Buchanan, addressed to the Registrar, by desire of the Examiners in Arts of Apothecaries' Hall.

Moved by Dr Andrew Wood, seconded by Dr Parkes, and agreed to:—"That the Registrar be directed to inform Dr G. Buchanan that the Medical Council has recommended that, after 1869, the following subjects shall be compulsory, viz.:—1. English language, including grammar and composition; 2. Arithmetic, including vulgar and decimal fractions; Algebra, including simple equations; 3. Geometry, first two books of Euclid; 4. Latin, including translation and grammar; 5 Greek. And one of the following subjects, at the option of the candidate:—1. French; 2. German; 3. Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.

5. *Read*—A letter from Dr W. B. Hepworth, relative to the Medical Acts Amendment Bill.

6. *Read*—A letter from the Cork Medical Protection Association.

Moved by Dr Alexander Wood, seconded by Mr Hargrave, and agreed to:—"That the part of the memorial of the Cork Medical Association which relates to Preliminary Education, be referred to the committee now sitting on the subject; and that the Cork Medical Association be informed that the part of their memorial which suggests the introduction of clauses giving the Council compulsory powers to enforce their educational recommendations, will receive the full attention of the Council."

7. *Read*—A letter from Dr James Mason, relative to the Medical Acts Amendment Bill.

8. *Read*—A letter from Dr Gibson, relative to the Qualification of Master in Surgery.

Moved by Sir D. J. Corrigan, seconded by Dr Apjohn, and agreed to:—"That an answer be returned to Dr Gibson, to the effect that the question referred to in Dr Gibson's letter is purely a legal one, involving the interpretation of the Poor Law Acts and Medical Acts; and the General Medical Council therefore decline to give an opinion thereon."

9. Read—A petition from Mr Richard Organ, to be allowed to present himself for examination at one of the examining bodies; this was referred to a committee, which, in its report given in on June 5, recommended the Council to decline entertaining Mr Organ's application.

MINUTES OF MEETING, *Tuesday, June* 4, 1867.

Dr Burrows, *President*, in the chair.

1. The President laid before the Council a letter which he had received from Mr Walpole.

Dr Burrows. Balmoral, June 1, 1867.

My Dear Sir,—I have just received your communication from the Medical Council, respecting the amendment of the Medical Act. As I am no longer the Home Secretary, and, in point of fact, am not likely to be in London for some days, I have thought it best to send your communication on at once to Mr Hardy.—Yours, etc. S. H. WALPOLE.

Moved by Dr Acland, seconded by Dr Quain, and agreed to:—"That the President be requested to ask Mr Gathorne Hardy to appoint a time for receiving a deputation from the Medical Council, with respect to the Medical Act."

2. Moved by Dr Acland, and seconded by Dr Stokes:—

"*Suggestions for Enabling Clauses in a New Medical Act.*

"1*st*, That it is desirable to obtain the following additional powers under the Medical Act, with respect to Examinations, viz.:—

"Whereas there are now in the United Kingdom nineteen licensing bodies, having power to confer thirty separate licenses and fifty-three different titles; and whereas it was the intention of the Medical Act to produce a uniform and sufficient standard in the examinations conducted by the said licensing bodies; and whereas the power of combining the examinations of the said licensing bodies under Clause XIX. of the Medical Act has been sparingly used; whereas the visitation of the examinations of so many bodies by different visiters is a cumbrous form of procedure, and one ill calculated to produce the uniformity sought for, and that further concentration of the examinations will tend to the accomplishment of that object;

¶ "It is desirable that the General Medical Council shall have power to combine with any of the licensing bodies mentioned in Schedule (A) of the Medical Act, in conducting examinations, by the appointment of assessors, visiters, or examiners, conjointly with such bodies, in such number and with such duties as shall be agreed upon between the Council and the bodies agreeing to conduct such joint examination. That the examiners, assessors, or visiters, so appointed, shall not be members of the Council, and shall be paid in such manner and at such rate as the General Council, subject to the approval of the Treasury, shall decide; that the qualification so conferred may be entered in the *Medical Register*; that if the qualification so conferred shall be granted after examinations in Medicine, in Surgery, and in Midwifery, it may be accepted by any public bodies who have heretofore required a so-called 'double qualification;' that nothing in this qualification shall debar the holder from obtaining the further title of Physician, Surgeon, Doctor, Master in Surgery, or Fellow of any College, or the like, on such terms as the bodies mentioned in Schedule (A) respectively may determine; nor from obtaining separate qualifications from such bodies, as at present.

"2*d*, That in order to encourage the study of hygiene and 'State Medicine,' it is desirable that the Council shall, in combination with any of the licensing bodies, have power to institute examinations in hygiene and 'State Medicine,' and to give certificates of competency therein, and that these certificates may be entered upon the general register, as an additional qualification or title of registered persons.

"3*d*, That whereas it is the duty of the Medical Council to republish, alter, and amend the *British Pharmacopœia*, lately published (Clause 54, Medical Act), and the Council have resolved that they do not consider that they have power under the Medical Act to expend any funds in inquiring into the utility of articles introduced into the *Pharmacopœia*, but only how to prepare such articles; it is desirable that the Council shall have power to expend such sums as it may see fit from time to time, with the approval of the Treasury, on investigations calculated to perfect the knowledge and to test the utility of articles of reputed or probable value, whether recently discovered or otherwise, with a view to include them in, or reject them from, future editions of the *British Pharmacopœia*."

Dr Acland having been allowed to postpone the consideration of the two first paragraphs of his motion, moved the third paragraph (marked ¶).

While Dr Acland was engaged in introducing the foregoing motion to the Council, Mr Syme took the chair, at the request of the President, who quitted the Council in order to seek an interview with Mr Secretary Hardy.

The President having returned and resumed the chair, informed the Council that Mr Secretary Hardy had consented to receive a deputation from the Council on Thursday, at half-past twelve o'clock.

Amendment, moved by Mr Rumsey, and seconded by Dr Leet:—"That a committee be appointed to consider the motion of Dr Acland, and report thereon to the Council at or before their next session."

The amendment was carried, and then put as a substantive motion, and negatived.

MINUTES OF MEETING, *Wednesday, June* 5, 1867.

Dr Burrows, *President*, in the Chair.

1. Moved by Dr Paget, seconded by Mr Hawkins:—"That the following amendment of Clause XI. of the Medical Acts Amendment Bill, proposed by the Medical Acts Amendment Committee, be adopted:—'It shall be lawful for the General Council, by special orders, to dispense with such provisions of the Medical Acts, or with such part of any Regulations made by authority of the said Acts, as to them shall seem fit, in favour of persons who shall make application to be registered under the said Acts on foreign or colonial diplomas or degrees: provided such persons shall have resided in the United Kingdom for a period of not less than twelve months immediately previous to making application to be registered: provided the holders of those diplomas or degrees have the right to practise Medicine and Surgery in the countries where they have been granted: and provided the Council shall receive satisfactory evidence that those degrees or diplomas, or licenses to practise, have been granted after a course of study and examinations such as to secure the possession by parties obtaining them of the requisite knowledge and skill for the practice of their profession.'"

Amendment moved by Sir D. J. Corrigan, and seconded by Mr Hargrave:—"That the words 'or colonial,' in line six, be omitted; that all the words after 'application to be registered' be omitted; and that the following be inserted in their place:—'And that the holders of such foreign diplomas have presented themselves for examination, and have obtained the license or degree, after such examination of some one of the licensing bodies now legally authorized to grant degrees or licenses in the United Kingdom; that it shall be lawful for any of the licensing bodies of the United Kingdom to examine the holder of a foreign license or degree on the production of such license or degree, and, in the event of the several licensing bodies refusing to examine such holder of a foreign diploma, that it shall then be lawful, if the Council see fit, to register the holder of such foreign diploma without such examination.'"

The amendment was negatived: minority, 4, viz., Dr Fleming, Dr A. Smith, Mr Hargrave, Sir D. J. Corrigan.

The motion was then put to the vote, and carried.

The following members of Council were appointed to form the deputation to wait upon the Home Secretary:—The President, Dr Paget, Dr Andrew Wood, Dr Christison, Dr Apjohn, Mr Cæsar Hawkins.

3. The next subject on the programme was the motion of Dr Acland, the consideration of which was entered upon yesterday.

The third paragraph was, after much able discussion, negatived. The paragraphs which were not considered yesterday were, by permission of the Council, postponed.

5. On the motion of Sir D. J. Corrigan, seconded by Dr Stokes, "The Returns from the Director-General of the Army Medical Department were entered on the Minutes."

The following Table, compiled from the Returns for the Examinations in March and August 1866, *and February* 1867, *gives the gross result:—*

Name of Licensing Body.	No. of Qualifications.			Deficient in			
	Total.	Number Passed.	Number Failed.	Anatomy.	Surgery.	Medicine.	All Subjects.
College of Physicians, London, . .	1	1	0	0	0	0	0
College of Physicians, Edinburgh, .	26	17	9	5	5	1	3
College of Physicians, Dublin, . .	30	21	9	3	2	2	5
College of Surgeons, London,. . .	19	15	4	2	0	0	2
College of Surgeons, Edinburgh, .	16	9	7	5	4	0	2
College of Surgeons, Dublin, . .	49	36	13	3	6	5	5
University of Edinburgh, M.D., .	3	1	2	1	1	0	0
University of Dublin, M.B., . .	17	14	3	1	2	1	0
University of Dublin, M.C., . .	11	9	2	1	0	1	0
University of Aberdeen, M.B., . .	1	1	0	0	0	0	0
University of Aberdeen, M.C., . .	1	1	0	0	0	0	0
Queen's University, M.D., . .	11	9	2	1	1	2	0
Queen's University, M.C., . .	3	3	0	0	0	0	0
Faculty of Physicians, Glasgow, .	2	1	1	2	1	0	0
Apothecaries, London, . . .	13	10	3	2	1	0	0
Apothecaries, Dublin, . . .	4	3	1	1	1	0	0
	207	151	56				

Number of Candidates successful, 73; unsuccessful, 27; total, 100.

Moved by Dr Andrew Wood, seconded by Mr Hargrave, and agreed to,—"That the best thanks of the Council be given to the Director-General of the Army Medical Department for the Returns which he has been good enough to transmit to the Council."

6. The Council having balloted for the Executive Committee, the following were found to be elected,—Mr Hawkins, Dr Acland, Dr Paget, Dr Andrew Wood, Dr A. Smith, Dr Sharpey.

7. Moved by Dr Embleton, seconded by Mr Hargrave, and agreed to,—"That the Secretary of State for India in Council be respectfully requested to furnish to the Medical Council annually lists of the Examinations held at Chelsea of Medical Candidates for the Indian Service, in a form similar to that furnished by the Director-General of the Army."

8. On the motion of Sir D. J. Corrigan, seconded by Dr Embleton, and agreed to,—"The following Communications and Returns from the Director-General of the Medical Department of the Navy were entered on the Minutes."

Dr F. Hawkins. Admiralty, 30th March 1867.

Sir,—With reference to your letter of the 27th May 1864, I have the honour to forward, for the information of the General Council of Medical Education and Registration of the United Kingdom, a report from the Board of Examiners on the Examination of Candidates for Medical Commissions in the Royal Navy during the year 1866.—I have, etc., A. Bryson, *Director-General.*

Dr A. Bryson, C.B. Admiralty, 30th March 1867.

Sir,—We have the honour to acquaint you, for the information of the General Council of Medical Education and Registration, that, during the year 1866, nineteen Candidates presented themselves for examination for Medical Commissions in Her Majesty's Naval Service.

1st, Of these, eleven passed more or less satisfactory examinations, and were admitted into the service, and eight were rejected.

2d, Three of the eleven who were admitted into the service passed good examinations in all subjects; one who otherwise passed a good examination was somewhat deficient in Latin and Botany; four passed moderately good examinations; and in three the examination passed was indifferent.

3d, One Candidate who passed a good examination in all subjects had been once previously examined and rejected, and the same observation applies to one who passed a moderately good examination. The Candidate who passed a good examination with the exception of Latin and Botany had been twice previously examined and rejected.

4th, Of those who were rejected, three failed in their Classical Examination. One of these, however, was found to be also physically unfit for the service, and one of the others was so ignorant of the Latin language, that he declined to attempt to translate, and failed to write an ordinary prescription.

5th, The remaining five were rejected for ignorance of Anatomy and Surgery chiefly.

6th, Appended hereto are lists of the subjects upon which the Candidates were orally examined, the questions forming the subjects for their written examination, and a tabular statement, showing the qualifications of the different candidates according to Schedule (A) of the Medical Act, the results of the examinations in each case, and the subjects in which the candidates were most deficient.—We have, etc.,

J. W. Salmon, M.D., *D. I.-G.*
Wm. R. E. Smart, M.D., *D. I.-G.*
Alex. E. Mackay, M.D., *D. I.-G.*

ANATOMY.

Anatomy of the pelvis. Abdominal aorta. Iliac arteries. Anatomy of internal iliac artery; branches of, and distribution. Vessels likely to be wounded in operation of lithotomy. Situation of kidneys, and structure. Anatomy of bladder. Hip-joint: ligaments of, and description; arteries supplying joint; muscles surrounding joint. Parts passing between side of coccyx and femur. Origin, course, and insertion of external, oblique, and other muscles of abdomen. How is the brain supplied with blood? Origin and course of vertebral arteries; termination of basilar artery; and formation of posterior portion of circle of Willis. Course and distribution of internal carotid artery. Venous sinus of cranium. Venæ Galeni. Ophthalmic veins. Origin and course of olfactory, optic, motor oculi, and trochleator nerves. Nerves of motion; of sensation; mixed nerves. Structure of brain. Bones entering into composition of knee-joint. Articular surfaces of tibia. Ligaments of knee-joint. Origin and insertion of external lateral ligaments. Describe—Crucial ligaments; origin, course, and insertion of Sartorius; Vastus internus; course of femoral artery from origin to termination; relations of the artery at Hunter's canal; origin, course and insertion of sterno-mastoid, omohyoid, trapezius; boundaries of anterior triangle of neck; ditto, posterior; ditto, division of anterior triangle; contents of superior carotid triangle; ditto, inferior posterior triangle; relations of contents. Describe—The scapula, its processes, borders and angles; ligaments of scapula of shoulder-joint; origin and insertion of triceps extensor cubiti; origin and course of posterior circumflex artery; ditto of arteria dorsalis scapulæ; ditto, and distribution of radial artery; ditto and ditto of median nerve. Origin, course, and insection of flexor sublimis digitorum; ditto, ditto profundus. Formation, course, and termination of thoracic duct. Origin and insertion of rectus femoris. Relations to hip-joint. Origin, course, and insertion of vastus internus; ditto, Sartorius. Course of femoral: muscles it rests on in upper part of course. Describe—The formation of the upper portion of the inguinal canal; origin, course, and distribution of deep epigastric artery. Subclavian artery: origin of, on right side; branches; course of transversalis Colli.

SURGERY.

Retention of urine. Symptoms of treatment of spasmodic stricture. Operation of tapping the bladder from the rectum. Ditto above the pubis. Dislocation of hip-joint. Operation of paracentesis thoracis, and for what diseases required. Wound of palm of hand: probable source of arterial hæmorrhage. Ligature of radial and ulnar arteries. Ligature of carotid artery. Symptoms of popliteal aneurism: treatment of. Operation of ligature of femoral artery in Scarpa's triangle. Amputation at ankle (Syme's) Chopart's operation. Dislocation of humerus into axilla: symptoms and treatment of. Amputation of thumb at carpo-metacarpal joint.

PRACTICE OF MEDICINE.

Continued fever. Typhoid or enteric fever: symptoms and treatment of. Pneumonia. Variola. Division of dropsies as to localities. Organs principally diseased in dropsies. Bright's disease: symptoms of; character of urine; causes of Bright's disease; pathological changes in kidney. What are the indications of inflammatory disease of the kidney in the first stage. What is the character of the second stage. Post-mortem appearances. Treatment of nephritis in the first stage. Phrenitis, Meningitis. Symptoms of meningitis. Distinction between rheumatism and gout. Symptoms of acute pericarditis. Differential diagnosis between mitral obstruction and mitral regurgitation. Eruptive fevers, what they are, and what are their characteristics. Period of incubation of small-pox, course, etc., of ditto. Ditto, scarlatina. Measles. Pathology of cholera.

MATERIA MEDICA.

Compound rhubarb pill. Composition of elaterium, iodide of potass: preparation and doses. Liquor potassæ arsenitis: preparation of, use, and doses. Preparation, action, and doses of calomel. Corrosive sublimate. Action of iodine. Preparation of extract and tincture of nux vomica: action and dose of. Preparation of strychnine. Sulph. of zinc: action, dose. Emetic of antimony and ipecacuanha, with prescription. Scammony: natural family, doses, action, and preparations into which it enters. Ipecac. pulv. Ipecac. co. Senna.

CHEMISTRY.

Iodine: ppn. of; Symb. equival: Oxygen, hydrogen, nitrogen, arsenic symb. Equiv. tests. Preparation of nitric acid. Compounds of oxygen and nitrogen. Cyanogen. Hydrocyanic acid. Hydrochloric acid. Chemical nomenclature. Oxacids. Hydracids. Binary, ternary and quaternary compounds. Bromine: Equiv. symb. Preparation of potassium. Iodide of potassium. Ammonia: preparation of nitrate of ammonia. Preparation of nitrous oxide by decomposition of nitrate of ammonia. Nature of decomposition. Mercury. Chlorine: compounds of. Elimination of nitrogen by kidney. Composition of urine: specif. gravity. Tests for albuminous urin Diabetic urine.

BOTANY.

Structure of exogenous stem. Structure of root; varieties of roots; functions of root. Parts entering into composition of flower. Essential parts of pistil, sessile stigma. Parts essential to life of plant: structure of leaf; varieties of leaves. Function of circulation of sap in stem. Description of colchicum autumnale: natural family of. Division of plants. Use of pith. Leontodon taraxacum: description of; natural family. Organs of reproduction in plants. Atropa belladonna: description of; natural family. Rubiaceæ Cucurbitaceæ.

MIDWIFERY.

Natural Labour: stages of. and mode of conducting; case of. Application of long and short forceps, and under what circumstances necessary. Turning: method of procedure in. Under what circumstances necessary. Uterine hæmorrhage: cause of, and treatment. Treatment of case of twin labour. Causes of retained placenta, and treatment in different forms. Presentation of funis: treatment of. Placenta prævia: symptoms of, before full period of utero-gestation; treatment of.

SUBJECTS FOR WRITTEN PAPERS.

1. Describe the hip-joint, and in how many ways it may be dislocated; mention the usual position of the limb in the several dislocations.

2. What are the different kinds of aneurism which may arise from the artery having been wounded in venesection? Give, 1*st*,—The treatment if called immediately after the injury; 2*dly*,—Where you had not been consulted till many days had passed, during which there had been frequent returns of arterial hæmorrhage.

3. What are the symptoms of lead poisoning? Sketch the treatment, prophylactic and curative.

4. Describe the pathological causes of diarrhœa, and the indications to be kept in view in the treatment.

5. Describe the symptoms and treatment of pneumonia.

6. Describe the symptoms diagnostic of popliteal aneurism; the treatment of, before proceeding to operation; the operation, and the channels through which the circulation afterwards would be maintained.

7. Describe generally the shoulder-joint: the bones entering into its formation; the ligaments and the muscles immediately surrounding it.

8. Describe the general symptoms, physical signs, and treatment of phthisis; firstly in the incipient, and secondly in the advanced stages.

9. Describe the chemical changes which take place when dilute sulphuric acid is poured on the proto-sulphuret of iron.

10. What are the symptoms of strangulated inguinal hernia? Describe the treatment in the first instance; the symptoms necessitating a cutting operation; and the operation.

11. Describe the anatomy of the parts concerned in the operation for oblique inguinal hernia.

Qualifications, according to Schedule (A), *of the different Candidates who were examined for Medical Commissions in the Royal Navy in* 1866, *with the results of the Examinations.*

1. Lic. R. Coll. Surg. Irel., and Lic. Apoth. Hall, Dubl. Passed, second examination. Moderately good; deficient in Practice of Medicine, Chemistry, Materia Medica, and Botany.

2. Lic. R. Coll. Surg. Irel., and M.D. Q. Univ. Irel. Passed. Indifferent. Only subject good, Anatomy.

3. M.B. Univ. Aberd., and Mast. Surg. Univ. Aberd. Passed. Moderately good. Deficient in Practice of Medicine, Chemistry, and Midwifery.

4. Lic. R. C. Phys. Edin., and Lic. R. C. Surg. Edin. Rejected. Failed in classical examination, and considered otherwise physically unfit for the service.

5. Mem. R. Coll. Surg. Eng. Rejected. Ignorant of Anatomy and Surgery.

6. Lic. R. Coll. Phys. Edin., and Lic. R. Coll. Surg. Irel. Rejected. Utterly failed in Preliminary Examination.

7. Mem. R. Coll. Surg. Eng. Rejected. Ignorant of Anatomy, Surgery, and Practice of Medicine.

8. Lic. K. & Q. C. Phys. Irel.; Lic. Mid. K. & Q. C. Phys. Irel., and Lic. R. Coll. Surg. Irel. Passed, second examination. Good in all subjects.

9. Mem. R. Coll. Surg. Eng. Rejected. Ignorant of Anatomy and Surgery.

10. Lic. R. Coll. Phys. Edin., and Lic. R. Coll. Surg. Edin. Rejected. Failed in classical examination; declined to attempt to translate, and failed to write a prescription.

11. Lic. R. Coll. Phys. Edin., and Lic. F. Phys. Surg. Glasg. Rejected. Ignorant of Anatomy and Surgery.

12. M.B. Univ. Dubl., and Mast. Surg. Univ. Dubl. Passed. Moderately good. Deficient in Surgery, Practice of Medicine, Chemistry, and Materia Medica.

13. Mem. R. Coll. Surg. Eng. Passed. Indifferent. Deficient in Anatomy, and only fair in others.

14. Mem. R. Coll. Surg. Eng., and Lic. Soc. Apoth. Lond. Passed. Good. Deficient in Latin and Botany.

15. Mem. R. Coll. Surg. Eng. Rejected. Ignorant in all the branches.

16. Lic. R. Coll. Surg. Irel. Passed. Indifferent. Anatomy and Midwifery good, others only fair.

17. Lic. Mid. K. & Q. C. Phys. Irel.; M.D. Q. Univ. Irel., and Mast. Surg. Q. Univ. Irel. Passed. Good in all subjects.

18. Mast. Surg. Univ. Edin., and M.B. Univ. Edin. Passed. Moderately good. Deficient in Anatomy and Surgery.

19. Lic. R. Coll. Surg. Irel. Passed. Good in all subjects.

Moved by Dr Fleming, seconded by Dr Apjohn, and agreed to,—"That the best thanks of the Council be returned to the Director-General of the Medical Department of the Navy for his valuable communication relative to the examination of candidates for Medical Commissions in the Navy.

10. Moved by Dr Christison, seconded by Dr Storrar, and agreed to,—"That in accordance with the recommendation of the Pharmacopœia Committee, a committee be appointed to watch the progress of Pharmacy." The same committee

as before was appointed, viz.—The President, Dr Christison, Dr Sharpey, Dr Apjohn, and Dr Quain.

11. Received and read the following

REPORT of the COMMITTEE appointed 30th May 1867, to take into consideration and report how the Council can best deal with the whole subject of Preliminary Examination, and to report during the present Session.

Your committee are satisfied that the importance of the subject of General Education fully warrants the attention which it has received at the hands of the Council from the commencement of its labours until the present time.

It is obvious that proficiency in medical study must be to a great extent affected by the ability conferred on the medical student by previous mental training to profit by the lessons of his medical teachers, and that a sufficient general education in literature and science, obtained before the commencement of professional study, will go far to secure the entrance into the profession of men who will do credit to it by possessing such a degree of enlightenment of mind, derived from literary acquirement, as will secure the respect of the educated persons with whom they may afterwards be brought into relation in the course of their professional duties.

In 1859 the Council agreed to a series of Recommendations, which were repeated from year to year, with various additions, until, in 1866, they were sent out to the various licensing bodies. [See this Journal for July 1866, pp. 92, 93.]

Your Committee are of opinion that it would be unwise to disturb, this year, Recommendations carefully considered by the Council last session, which have not yet had a sufficient trial, and some of which have not yet come into operation, especially as the Visiters of Examinations give in most cases a satisfactory report of the manner in which the Examinations in general education are conducted. The Committee are however of opinion, that the time has come when the Council, without going beyond the minimum adopted in 1866, should indicate more precisely how the knowledge possessed by students of the subjects contained in that minimum may be best tested. Further, your Committee are of opinion that the Council should consider how far it might be possible for them, by friendly communication with the national educational bodies, to whom they have repeatedly recommended that general education should be entrusted, to secure some means of visiting their Examinations, and of making suggestions in regard to the mode of conducting them of a similar nature to those which have proved beneficial in regard to Professional Examinations.

It is very evident, as indeed the Reports of the Visitors of Examinations demonstrate, that the subjects contained in the minimum laid down by the Council may be variously understood, and the examinations may be variously conducted by the examining bodies.

For example, 1. "ENGLISH LANGUAGE, including Grammar and Composition," as recommended in 1866, may be a sufficient test in the hands of one Examiner, and insufficient in the hands of another; in fact, the test may be so applied as utterly to fail in preventing the entrance of illiterate persons into the profession.

Your Committee would recommend that, in re-issuing this Recommendation, notes to the following effect should be appended:—

The General Medical Council will not consider any examination in English sufficient that does not fully test the ability of the candidate—

1*st*, To write a few sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition. 2*d*, To write a portion of an English author to dictation. 3*d*, To explain the grammatical construction of one or two sentences. 4*th*, To point out the grammatical errors in a sentence ungrammatically composed, and to explain their nature. 5*th*, To give the derivation and definition of a few English words in common use.

2. "ARITHMETIC AND ALGEBRA" seem not to need any comment.

3. "GEOMETRY—*First two books of Euclid*."—It is obvious that an examination conducted under this brief instruction is not necessarily efficient, unless the questions be so put as to exclude the deception which may arise from the

candidate answering without real knowledge, merely through the help of a powerful memory and careful "cramming." Precautions therefore should be taken against this risk, and to secure that he possesses a real knowledge of the subject.

4. "LATIN."—It is perhaps in Latin, next to English, that the Committee think it necessary that the Council should recommend what would, in their opinion, constitute a satisfactory examination. Your Committee would suggest,—

1*st*, That the candidate, with the aid of a dictionary if desired, should be required to translate three or four sentences from an easy author, not having been informed beforehand from what author the sentences will be selected. 2*d*, That he should be required to translate easy sentences from English into Latin, either with the aid of a dictionary or on being furnished with the Latin words, altered in order, number, case, mood, and tense. 3*d*, That he should be required to parse a Latin sentence, so as to show his acquaintance with the Latin Grammar.

Your Committee would consider it more satisfactory if the Preliminary Examination were made in every case to include an oral as well as a written examination. They are well aware that there are great difficulties in the way of such an arrangement, but still they would recommend the Council to encourage it as far as it may be practicable.

Your Committee are of opinion that the minimum of general education laid down in 1866 will eventually require alteration, but as the Report of the Royal Commission in Scotland on the school education of that country very recently published, and the Report of the Royal English Commission, now in course of preparation, will throw much light on the school education of both countries, the Council will hereafter be enabled thereby to judge more accurately both of the amount and of the kind of knowledge that can be fairly demanded of well-educated youths of 16 or 17 years of age.

The last subject on which your Committee would touch, is the question by what Boards the examinations should be conducted. They still adhere to the opinion, early expressed in this Council and never deviated from in former Reports on the subject—"That, as far as may be practicable, testimonials of proficiency, granted by the national educational bodies, be accepted as sufficient evidence of a student's acquirements in general education, and that the examination on general education be eventually left entirely to the examining boards of national educational bodies recognised by the Medical Council."

Your Committee fear that a too liberal interpretation of this resolution has led to the admission of several bodies on the list whose examinations do not come up even to the minimum which the Council has resolved, in the meantime, to accept. To remedy this defect, your Committee would suggest that the Council should recommend—

1*st*, That after 1868, all examinations be removed from the list of those recognised which do not in all respects come up to the minimum which the Council laid down in 1866.

2*d*, That the various Licensing Boards be recommended to discourage the practice of receiving the certificates of these bodies on some branches, and then supplementing their examinations by others in the omitted branches.

3*d*, That examinations in Arts, specially designed for medical students, should not in any case imply education inferior to that of students intended for other professions.

4*th*, That all examinations in Arts should be conducted by examiners specially qualified in Arts.

5*th*, That it be remitted to the Branch Councils to consider how the means of examining medical students in general education can be most easily provided at the several seats of medical education under their jurisdiction, and to report on this subject to the Council in 1868.

6*th*, That it be remitted to the branch Councils to visit as far as possible the different preliminary examinations held by educational as well as licensing bodies, and to report their opinion of these examinations to the next meeting of the General Medical Council.

Since the foregoing report was prepared, the Council have instructed the committee to consider and report on two communications addressed to the Council—

1. An application from M'Gill University, Montreal, to have their certificates of preliminary examinations recognised by the Council.

2. A recommendation in a memorial from the county and city of Cork Medical Protective Association, to the following effect:—"That the course for a degree in Arts in the different universities should, in the opinion of your memoralists, be preliminary to that for a degree in Medicine, and that a course of education embodying both classical studies and the various branches of physical science, should be indispensable before entrance on medical and surgical education of whatever character."

In regard to the first, the Committee have to report that the requirements of the examinations of M'Gill College are founded on the recommendations of the Medical Council; that it has a good reputation; and that if the examinations are efficiently conducted, there should be no difficulty about its recognition, provided the present system is to be continued. The whole question, however, of the recognition of colonial degrees, licenses, and examinations, is one of great delicacy, and ought to be considered and reported on by a separate committee.

In regard to the recommendation in the memorial of the Cork Medical Protective Association, referred to your Committee for their consideration, your Committee are of opinion that the Council, having already decided that the examination on general education shall be undergone before the student commences his medical studies, and having endeavoured gradually to improve the preliminary education, are going, as fast as it is safe to do, in the direction indicated by the memorialists. ALEXANDER WOOD, *Chairman.*

MINUTES OF MEETING, *Thursday, June* 6, 1867.

Dr Burrows, *President*, in the chair.

1. The President informed the Council that the deputation appointed yesterday had waited upon the Secretary of State for the Home Department, who paid great attention to the remarks which they addressed to him relative to the proposed Medical Acts Amendment Bill, and promised to give the matter his consideration, and to confer with Mr Walpole on the subject.

Moved by Dr Christison, seconded by Dr Bennett, and agreed to,—"That it be delegated to the Executive Committee to resume its conferences with Government regarding the Bill for Amendment of the Medical Acts, as now adjusted by the Medical Council, and to take such steps as they may find advisable towards carrying the Bill through the Legislature in the same manner as the Medical Act itself, and as all amendments on that Act."

2. The Report on Preliminary Examinations was taken into consideration.

Moved by Dr Alexander Wood, seconded by Dr Embleton, and agreed to, —"That in re-issuing the recommendation that 'English Language, including Grammar and Composition,' be one of the subjects of Examination, notes to to the following effect should be appended: The General Medical Council will not consider any examination in English sufficient that does not fully test the ability of the candidate,—1*st*, To write a few sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition. 2*d*, To write a portion of an English author to dictation. 3*d*, To explain the grammatical construction of one or two sentences. 4*th*, To point out the grammatical errors in a sentence ungrammatically composed, and to explain their nature. 5*th*, To give the derivation and definition of a few English words in common use."

Moved by Dr Andrew Wood, seconded by Dr Parkes, and agreed to,— "That after 1868, all examinations be removed from the list of those recognised which do not in all respects come up to the minimum which the Council laid down in 1866."

3. Moved by Mr Syme, seconded by Dr Storrar, and agreed to,—"That

the application from the M'Gill University, to have their certificates of preliminary examinations recognised by the Council, be acceded to."

4. Moved by Dr Parkes, seconded by Mr Hargrave, and agreed to,—"That an answer be sent to the Cork Medical Protective Association, to the effect that the Council, having already decided that the examination in general education shall be undergone before the student commences his medical studies, and having endeavoured gradually to improve the preliminary education, are going as fast as it is safe to do in the direction indicated by the Cork Medical Protective Association."

5. Dr Sharpey, as Chairman of the Finance Committee, submitted to the Council the following

REPORT OF THE FINANCE COMMITTEE.

The Finance Committee beg leave to present, in the Table subjoined, a statement of the estimated and actual income and expenditure of the year 1866; also an estimate of the income from ordinary sources, and of the expenditure, as far as the Committee are able to judge, for the year 1867.

The expenditure of 1866 has exceeded that of 1865 by £513, 1s. 5d. This excess is in considerable part due to an increase in the expense for printing the Minutes of Council. The increase of charge over that of the previous year, for attendance at the Executive Committee, is £50, 16s.

From the figures in the Table it will appear that the actual income of the past year exceeds the estimate by £53, 6s. 9d.; but as, on the other hand, the actual expenditure is greater than what was estimated, there is a balance of £455, 16s. 11d. against the Council.

As observed in the report of last year respecting such estimates, it is scarcely possible to judge of the prospective expenditure with any near approach to accuracy, inasmuch as the amount is greatly dependent on the duration of the sessions of Council, which cannot with certainty be determined beforehand.

A statement of the receipts and disbursements on account of the *British Pharmacopœia*, since the date of the account presented last year, and of the balance in the bank to the credit of the General Council, is given up to January 1867.

The Committee also present an account of the expense of preparing and publishing the new edition of the *Pharmacopœia*, so far as known or estimated, with an estimate of the proceeds of the sale of the entire impression of 20,000 copies.

	Estimated income for the year 1866.		*Actual income for the year* 1866.		*Estimated income for the year* 1867.	
Fees received by—	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*
Branch Council for England	2300 0 0	...	2267 0 0	...	2300 0 0	...
„ „ Scotland	600 0 0	...	611 15 0	...	600 0 0	...
„ „ Ireland	700 0 0	...	774 10 0	...	730 0 0	...
		3600 0 0		3653 5 0		3630 0 0
Dividends received by—						
Branch Council for England	620 0 0	...	633 15 4	...	630 0 0	...
„ „ Scotland	80 0 0	...	82 2 3	...	80 0 0	...
„ „ Ireland	70 0 0	...	68 9 2	...	60 0 0	...
		770 0 0		784 6 9		770 0 0
Sale of Registers . . .	...	300 0 0	...	285 15 0	...	300 0 0
		£4670 0 0		£4723 6 9		£4700 0 0

	Estimated expenditure for the year 1866.		*Actual expenditure for the year* 1866.		*Estimated expenditure for the year* 1867.	
Expenses of—	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*
General Council	...	3200 0 0	...	3775 2 9	...	3200 0 0
Branch Council for England	700 0 0	...	801 17 5	...	800 0 0	...
„ „ Scotland	280 0 0	...	332 4 6	...	340 0 0	...
„ „ Ireland	340 0 0	...	269 19 0	...	300 0 0	...
		1320 0 0		1404 0 11		1440 0 0
		4520 0 0	Total Exp.	5179 3 8		4640 0 0
	Balance in favour of Med. Coun.	150 0 0	Total Inc.	4723 6 9	Balance in favour of Med. Coun.	60 0 0
			Excess	£455 16 11		
		£4670 0 0				£4700 0 0

Account of the "British Pharmacopœia" (1864), *for the year ending January* 5, 1867.

1867.—January 5th.	£	s.	d.	1867.—January 5th.	£	s.	d.
To RECEIPTS:				By DISBURSEMENTS:			
Balance as per last Statement (Jan. 5, 1866)	1598	17	1	For Reporting on progress of Pharmacy: Dr Moore	20	0	0
Sale of 494 copies of the "British Pharmacopœia," 32mo edition	102	12	0	Advertisements	6	6	0
Interest	59	2	2	Carriage of Parcels, Booking, and Messenger	1	2	0
				Law Charges (1865)	9	6	8
				Keeping Type standing (three years)	60	0	0
					£96	14	8
				Balance	1663	16	7
	£1760	11	3		£1760	11	3

"*British Pharmacopœia*" *Statement.*

Total Cost of Preparing and Publishing the New Edition of the "British Pharmacopœia" (1867).

CHARGE.	£	s.	d.	DISCHARGE.	£	s.	d.
To Printing, Binding, etc., 20,000 copies	1764	0	0	By 20,000 copies at 6s. each	6000	0	0
„ Remuneration to two Editors	550	0	0	Deduct—			
„ Pharmaceutical Investigations	100	0	0	Allowance of one-third to Booksellers	2000	0	0
„ Travelling Expenses to Dr Apjohn	25	4	0				
„ Honorarium to Pharmacopœia Committee	500	0	0				
„ Advertising, etc. (estimate)	86	0	0				
	£3025	4	0				
„ Amount due to Medical Council on publication of the first edition	600	0	0				
Balance	374	16	0				
	£4000	0	0		£4000	0	0

On the motion of Dr Storrar, seconded by Mr Rumsey, the Report of the Finance Committee was adopted.

MINUTES OF MEETING, *Friday, June* 7, 1867.

Dr Burrows, *President*, in the Chair.

1. Moved by Mr Hargrave, seconded by Mr Couper, and agreed to,—"That the report be read of the Committee appointed on 31st May 1867, to prepare a Scheme for the Visitation of Examinations for the next year, and especially to consider the best means of supervising the Arts examination."

REPORT.

Your committee report that, by the Medical Act, two methods of visitation of examinations are permitted:—

One by the Members of Council,
The other by persons deputed by the Council;

and they presume that a combination of the two would not be contrary either to the spirit or the letter of the Medical Act.

A committee appointed by the Council on this subject, reported in favour of the second of these methods; but their suggestions were, on 1st July 1861, rejected by large majorities in the General Council.

On 6th April 1865, the following motion was agreed to by the Council,—"That each of the Branch Councils, or such of their members as may be deputed by such councils, shall, from time to time, visit the Examinations, preliminary as well as professional, conducted by the qualifying bodies in their respective divisions of the United Kingdom, and report the results of their observations to the General Council."

Under this resolution the Branch Councils gave in reports in 1866.

In 1866 the same plan was continued, with this addition, that the visiters were required to include in their reports a statement of the facts observed, and of their opinion of the efficiency of the examinations, as also such remarks and suggestions on defects in them as circumstances may indicate.—(Minutes, vol. iv., p. 279.)

Under this resolution, reports have been given in, in 1867, which have been repeatedly admitted, by various members of the Council, to be of great interest and value; and they will, in all probability, be rendered more conducive to the improvement of the examinations by the labours of the committee appointed by the Council this session, and which is still sitting.

Your committee regret to find that while the examinations of every licensing body in England have been visited and reported on, the reports from Scotland and Ireland are defective; that of Scotland not including any report on the University of St Andrews, the Royal College of Physicians of Edinburgh, and the Royal College of Surgeons of Edinburgh, although the joint examination held by these bodies is reported on; while from Ireland no report has been given on the examinations of the Apothecaries' Company.

After a very full consideration of the subject, your committee have determined to report that it appears to them desirable to continue the present system for one year longer at least.

They are, however, of opinion, that each Branch Council should consider how far it is necessary to visit annually the examinations of each licensing body, and whether the labour and expense of conducting these visitations might not be abridged by limiting the visitations of each year to the examinations of certain bodies only.

In regard to the visitation of the Arts examinations, the committee have fully considered the propriety of having it conducted by special examiners as well as by mixed boards; they are of opinion, however, on the whole, that such a change is not desirable.

In conclusion, the committee beg to recommend that the visiters of examinations should in future receive payment for their services: when at a distance, at the same rate as for attending the General Council; when at the place of their residence, at the rate allowed for attending a meeting of the Branch Council in addition to travelling expenses.

ALEXANDER WOOD, *Chairman.*

The report was adopted, with the exception of the last paragraph, which was amended as follows:—

"That the visiters of examinations shall in future receive payment for their services at the same rate as for attending a meeting of the Branch Council, in addition to travelling expenses, and that the expense of visiting the Examinations be paid from the funds of the General Council."

REPORT ON SUBJECTS OF PROFESSIONAL EDUCATION.

2. Moved by Dr Sharpey, seconded by Dr Storrar, and agreed to,—That the report of the committee on the subjects of professional education be received and read." After amendment, the following is the report:—

The committee appointed to consider and report "what are the subjects without a knowledge of which no candidate should be allowed to obtain a qualification entitling him to be registered?" beg to submit the following list of subjects:—1. Anatomy; 2. General Anatomy; 3. Physiology; 4. Chemistry; 5. Materia Medica; 6. Practical Pharmacy; 7. Medicine; 8. Surgery; 9. Midwifery; 10. Forensic Medicine.

The committee, in enumerating the subjects, a knowledge of which should constitute a minimum of the acquirements possessed by every registered medical practitioner, desire to add the following explanatory remarks:—"Chemistry" should include a knowledge of the principles of Chemistry, and of those details of the science which bear on the study of Medicine; "Medicine and Surgery" should include a knowledge of Systematic and Clinical Medicine and Surgery, and also of Morbid Anatomy.

Minutes of Meeting, *Saturday June* 8, 1867.

Dr Burrows, *President*, in the Chair.

1. Moved by Dr Embleton, seconded by Dr Paget, and agreed to:—"That the following report of the Committee on Returns from the Licensing Bodies, of Professional Examinations and their results, and on the Registration of Students for the year 1866, be received and entered on the minutes."

I. *Report of the Committee on Returns from the Licensing Bodies of Professional Examinations, and their results, and on the Registration of Students, for the year* 1866.

1. The Committee beg leave to lay before the Council a Table, compiled from the Returns, according to recommendation 6, sect. v. of the Recommendations of the General Medical Council of 1866, viz.; "That Returns from the Licensing Bodies in schedule (A) be made annually, on the 1st of January, to the General Medical Council, stating the number and names of the candidates who have passed their first, as well as their second examinations, and the number of those who have been rejected at the first and second examination respectively."

TABLE.

Licensing Bodies.	Passed.		Rejected.	
	1st Examin. Number.	2d Examin. Number.	1st Examin. Number.	2d Examin. Number.
R. Coll. Phys. London .	69	60	22	6
R. Coll. Surg. England .	373	344	136	76
Soc. Apothecaries, London	202	233	33	10
University of Oxford . .	2	2	2	...
" Cambridge .	11	5	2	...
" Durham . .	2	2	...	...
" London . .	[1] 22	25	15	1
R. Coll. Phys. Edinburgh	90	220	35	51
R. Coll. Surg. Edinburgh	[2] 75	[2] 119	31	39
Fac. Phys. Surg. Glasgow	31	52	10	22
University of Aberdeen	(1st) 48 (2d) 30	3d) 33	(1st) 1 (2d) 12	(3d) 6
" Edinburgh	(1st) 58 (2d) 92	(3d) 62	(1st) 18 (2d) 28	(3d) 18
" Glasgow .	49	48	(1st& 2d) 6	(3d) 1
" St Andrews	...	[3] 10	...	...
K. Q. Coll. Phys. Ireland	1 ...	78 54	... in Midwifery.	4 4
R. Coll. Surg. Ireland .	113 in Surgery. 8 in Midwifery.	98 ...	19 ...	8 ...
Apothecaries' Hall, Ireland	23	34	3	4
University of Dublin . .	12	32	10	3
Queen's University, Ireland	. .	No Returns	.	. .
	1311	1511	383	253

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[1] By the regulation, University Candidates are allowed, under certain conditions, to postpone their examination in Physiology until the first M.B. Examination of a subsequent year.

[2] In the Return, those gentlemen having the letter D prefixed to their names in both columns, were candidates for the double qualification in Medicine and Surgery of the Royal Colleges of Physicians and Surgeons of Edinburgh.

[3] Final examination for M.D. under old regulation.

It will be observed that returns have been sent in by all the licensing bodies with the exception of the Queen's University in Ireland, from which no returns have been received since 1864; and the committee would therefore suggest that the Registrar of the Council be directed to address a letter to the authorities of the Queen's University in Ireland, requesting them to furnish a return of professional examinations and their results, in accordance with the recommendation of the General Medical Council.

2. The Committee find that of Students registered for the year 1866, there were:—

In England	477
„ Scotland	302
„ Ireland	157
Total	936

The committee are aware that, owing to imperfections in the registration of 1865, a number of students who commenced professional study in that year were only registered in 1866; but the committee have not sufficiently accurate information to enable them to state the exact number of such students.

Of the whole number of students registered in 1866, it appears that 580 passed the preliminary examination in that year. Of the remainder, 208 passed the preliminary examination in 1865, and 146 in previous years.

The committee would suggest that a tabular statement of the number of students registered in the three divisions of the kingdom, be appended to the list of medical students registered during the year.

D. EMBLETON, *Chairman.*

On the motion of Dr Storrar, seconded by Dr Sharpey, the report was adopted.

REPORT ON VISITATION OF EXAMINATIONS.

The committee, in terms of the reference to them by the Council, having read over and carefully considered the whole of the reports of the Visitations of Examinations for the last two years, beg now to make such suggestions, founded on the various reports of the Visiters, as appear calculated—

1. To remedy defects in particular examinations; and
2. To improve generally the examinations for the license to practise Medicine and Surgery.

The committee will first make a few comments on the Reports of the Visiters, under the heads of the several licensing bodies, and will subsequently refer generally to some special matters which have arisen out of the consideration of the reports.

SPECIAL SUGGESTIONS.

I. THE ENGLISH LICENSING BODIES.

The Royal College of Physicians of London.

The committee observe that this College have discontinued their own preliminary examination in Arts, and now require that every candidate for their license should produce evidence of his having passed one of the preliminary examinations recognised by the Medical Council. It is probable that their example will be gradually followed by the other licensing bodies, other than Universities; if so, it will be necessary that the Medical Council, in this and in other similar cases, should take care to see that the recognised examinations in Arts include all the subjects required by them, and are in other respects deserving of recognition. But this subject belongs rather to the committee of the Council on preliminary examination than to this committee.

The committee observe that, in the professional examinations, at each table, only one examiner, who may have been the teacher of the candidate, without any assessor, examines the candidate on each subject and forms his opinion separately, and not necessarily after consultation with any other examiner.

The committee think it highly desirable, on all accounts, that there should always be present at each table, at least two examiners, who may decide upon the merits of the candidate after consultation. The same remark applies to the examination of some other bodies.

It appears that the anatomical examinations are conducted without the aid of anatomical dissections and preparations. Such an examination cannot be an efficient test of the anatomical knowledge of a candidate, and requires to be amended.

The committee observe that no separate decisions are given in the written, the oral, and the clinical examinations. They consider it preferable that each should be judged separately.

The Royal College of Surgeons of England.

In the report for last year the visitors stated it as their opinion, that the College examinations would be improved were the physiological examinations made more extensive, and were the surgical examinations to include a practical examination in surgical appliances, bandaging, etc. This year the committee are glad to observe that the College have given effect to the recommendations of the Visiters. The anatomical and physiological examinations seem now to be very efficient. The same may be said as to the surgical practical examination, though, perhaps, it is capable of being extended still further by causing the candidate to trace on a living man the lines of incision in amputations, deligation of arteries, etc. It would be desirable, too, were it practicable, to introduce operations on the dead body. It would also be extremely desirable to have clinical surgical examinations introduced into the College of Surgeons' examinations, as is now the case with many of the licensing boards. A difficulty may be found in the large number of candidates to be examined; but in London, where the hospitals are large and numerous, some arrangement might possibly be made by which each candidate might be made to show in one or more cases his knowledge of diagnosis. The matter is worthy of the attention of the College of Surgeons, and as they have already introduced clinical examinations into their fellowship examinations, they will doubtless, when possible, extend them to the candidates for their license.

Society of Apothecaries.

In the reports of 1865–6 the visitors made various suggestions, and the committee find, from the reports of 1866–7, that the Society have carried them out almost in their integrity. The committee trust that the introduction of clinical medical examinations will be also eventually adopted by the Society.

[The reports concerning the *Universities* of *Oxford*, *Cambridge*, and *London*, require no remarks.]

The University of Durham.

The professional examinations are satisfactory, and to be noted especially for their practical character. The preliminary examination, as at present conducted, does not seem satisfactory. It does not include the requisite number of subjects, and in some instances the questions are not up to the standard the Council desires to see. Dr Embleton stated to the committee that he was sure that the University would improve this examination before next year.

II. The Scottish Licensing Bodies.

University of Edinburgh.

The committee need only observe that the clinical medical and surgical tests, introduced of late years into the examination of the University of Edinburgh, have been carried out without difficulty and with great advantage.

University of Aberdeen.

The reports of this University are satisfactory. The examinations are well carried out, and are highly practical. In certain cases candidates have been exempted from oral examination on account of the excellence of their written answers; but the committee are of opinion that the recommendation of the General Council in this matter should be adhered to, and that no candidate should, in any case, be exempted from oral examination.

University of Glasgow.

The professional examinations are satisfactory. The preliminary examination in Arts appears to be defective; the papers are too elementary in some respects, and the candidates appear to have been allowed to pass too easily in some instances. Professor Thomson assured the committee that the University would take the matter into immediate consideration, with a view to the improvement of this examination.

The committee observe that the custom of exempting candidates from parts of the degree examination, on the ground of high merit in class examination, which was commented on by the Visiters of last year, has been now discontinued. The reports of the Visiters on this University are defective in not including any notice of the examinations in botany and chemistry. The clinical Surgical and Medical examinations, lately instituted, are highly efficient.

University of St Andrews.

No report has been made on this University.

Royal College of Physicians of Edinburgh.

The committee regret that no visitation of the examinations for the single license has yet been made; but they hope the Scottish Branch Council will arrange that this omission shall not again occur. It is understood that there is no practical clinical examination at present. The committee trust that the College will take into consideration the propriety of following the example set them in this respect by so many other licensing bodies.

Royal College of Surgeons of Edinburgh.

The examination for the single license was only reported on last year, and even then not completely. Judging from that single report, the number of written questions seems to have been too small; but Dr Andrew Wood stated to the committee that, since last year, the number of questions had been increased. The College have not hitherto instituted practical and clinical surgical examinations; but the committee are informed that arrangements have been made for commencing them at the autumn examinations, on a plan similar to that pursued at the University of Edinburgh.

Double Qualification of the Royal Colleges of Physicians and Surgeons of Edinburgh.

The preliminary examination and the second professional examination have been reported on, and are satisfactory so far as they go; but the professional examination, to be complete, requires that practical examinations in medicine and surgery shall be introduced. The first professional examination has not been reported on.

Faculty of Physicians and Surgeons of Glasgow.

No report has been given of the preliminary examination in Arts. The reports on the professional examination show them to be satisfactory as far as they go; but here also there is a want of practical and clinical Medical and Surgical examinations.

III. THE IRISH LICENSING BODIES.

In some respects the reports of the Irish examinations are defective, so that it is difficult for the committee to make a sufficient report on all of them. They trust the attention of the Irish Branch Council will be seriously directed to this matter.

University of Dublin.

The committee observe that by Act of Parliament a student may commence his professional study without a previous examination in Arts; the occurrence is rare, but the committee think attention should be called to it. The mode of carrying on the oral examination is peculiar to this University. It is conducted in class, and the committee believe cannot be so efficient as the ordinary method of examining each candidate apart. This examination is conducted in public.

The practical and clinical examinations in Surgery are excellent, and the committee observe that operations on the dead body are required. There are no clinical examinations in Medicine. A chemical laboratory has been recently erected by the Provost and Board of Trinity College, for the instruction of the students in Practical Chemistry; and Dr Apjohn has informed the committee that the examinations in Chemistry will henceforward be so conducted as to test the acquirements of the students in the practice as well as the theory of the science.

Queen's University in Ireland.

The committee are informed that a student may follow his professional studies for two years before passing his preliminary examination in Arts. The attention of the University should be directed to the evil of this, as permitting insufficiently educated persons to enter on professional studies.

The oral examinations are reported by the Visiters to be too short. There are operations on the dead body, but there are no clinical Medical or Surgical examinations.

King's and Queen's College of Physicians.

The preliminary examination in Arts is left to other bodies. It would appear that there is no written professional examination; but from the unavoidable incompleteness of the report, the committee are unable to form any correct opinion of the examinations of this licensing body. The examinations are open to all the Fellows and Licentiates of the College.

Royal College of Surgeons.

There is no report on the preliminary examination. The number of written questions in the first professional examination is small; there are only two questions in Anatomy, one in Physiology, and one in Materia Medica, and one hour only is allowed for the answers. At the oral examination, it appears that there is only one examiner at each table, and the decisions are given, without conference, by simple "yes" or "no." The committee have learned from Mr Hargrave that, since the visitation, the decisions are made by marks, and that a member of the Council sits at each table with the examiner. The second professional examination, in Surgery, Medicine, and Materia Medica is conducted exactly in the same time and manner. There is no mention of practical and clinical Medical or Surgical examinations. No teacher is allowed to be an examiner.

Apothecaries' Hall of Ireland.

No report has been made on the examinations of this body.

GENERAL SUGGESTIONS.

Combination of Licensing Bodies.

Referring to the number of licenses, the committee are of opinion that the Council should strongly encourage every effort now being made, or about to be made, under Clause XIX. of the Medical Act to combine the examinations of the licensing boards, so as to secure that every practitioner whose name appears on the register shall have been tested in all the branches of the Medical profession. It is of importance that the licensing bodies, at present too numerous, should be concentrated by such combinations. The examinations would thus be more easily supervised, and there would be a better guarantee for efficiency.

Practical Examinations.

The committee are of opinion that practical examinations are highly desirable in all the subjects in which they can be employed, and that in no other way can the examinations in these subjects be made completely satisfactory.

Under the term "practical" would be included all the examinations in which a candidate performs experiments or operations, or describes dissections or drugs, or performs *post-mortem* examinations, or examines with the microscope, or points of the like kind. It will be well, however, to illustrate by a table, more particularly what is meant.

Subjects.	*Practical Work.*
Chemistry, ...	Actual Laboratory work.
Materia Medica, ...	Actual compounding of prescriptions; pharmaceutical processes; naming and describing drugs.
Botany, ...	Recognition and description of plants.
Anatomy, ...	Dissections and preparations.
Medicine and Clinical Medicine, .	Examination of patients; microscopic and chemical examinations; pathological specimens.
Surgery and Clinical Surgery, .	Examination of patients; pathological specimens; bandaging, etc.; operations on the dead body, etc., etc.
Midwifery, ...	Operative Midwifery on models.
Forensic Medicine, ...	Laboratory work, microscopical and chemical examinations.

It is satisfactory to find that less difficulty has been experienced in arranging for such examinations than had been anticipated. The methods employed by different bodies are somewhat different, but the results in each case have been satisfactory. While the committee express their satisfaction at this improvement, and their hope that progress in this direction may continue, they do not advise that any rule should be laid down as to the mode of conducting these practical Medical and Surgical examinations, or as to the extent to which they should be carried. When the reports of all the visitations have been sent to the licensing bodies, the several methods now followed by some will be considered by all, and the best parts of each plan adopted.

The Written Questions.

The committee have been impressed with the importance of having the questions put in the most precise manner, so that the candidate may understand exactly what he is required to answer, and may be able to give precise and concise replies. They refer to the mode in which the questions are put by Professor Christison (*vide* the Report on the University of Edinburgh, April 1866) for examples of the plan which they think might be followed with advantage in many instances.

The attention of the committee has been called to the necessity of preventing copying. Among other means, the arrangement of candidates by numbers or alphabetically has been found useful in detecting collusion.

The committee have found it inconvenient not to have the questions attached to all the reports of the Visiters, and they advise that this should be done, at any rate for next year, in order to afford data for judging of the amount and quality of the written tests.

The Oral Examination.

The committee recommend that not less than two examiners should be present at every oral examination of a candidate. A decision should be based on the opinions of both examiners after consultation.

Uniform Standard of Judging the Results of Examination.

In several of the reports, viz., on the Society of Apothecaries, London, on the College of Surgeons, England, and on the University of Aberdeen, reference is made by the Visiters to the advantage of some uniform standard. There may be difficulties in framing one which is free from objection; but there is no doubt that even an imperfect rule is better than none at all, and the committee decided by a large majority that such a standard is desirable.

In making the following suggestions on such a standard, the committee regard them as merely the means of eliciting the opinions of the licensing bodies on a matter of great importance. In placing a scheme before them, and entering into some detail, the committee do so merely as a basis for discussion, and in the hope that it will lead eventually to a common action on the part of all the licensing bodies.

The numerical method of estimating the results of an examination is the most accurate and the most free from objections; it is now employed in all the Government competitive examinations, and is also used by the majority of the medical licensing bodies. The mode of using it, however, is different in each case; but, as the principle has been admitted by so many licensing bodies, it is believed that they will raise no objection to making such alterations as may render the results of the examinations comparable. Those licensing bodies which use such expressions as good, moderate, bad, or *optime*, *satis bene*, etc., not resting on a numerical basis, will, we conceive, have no difficulty in fixing a corresponding numerical value.

The method usually followed when a numerical standard is used, is to assign to each subject a certain number of marks, which represents the total number which a candidate can gain in that subject if he answers the questions as perfectly as is possible in the time.

But there are advantages in another plan, viz., fixing the number of marks according to the time during which the examination is carried on, so that the total number of marks indicates at once the length of time the candidate is under examination, as well as the character of the answers.

The advantages of this, for the purpose of the Medical Council, will be best seen by an example.

Supposing the first plan to be adopted, and on the subject of Surgery, for example, a total of 1000 marks is allowed by all the licensing bodies, no comparison is still possible between the results; for one body may give the whole 1000 marks to an oral examination only, another may distribute them among a written, an oral, and a practical examination. In the record, however, as presented to the Medical Council, the candidates from each body may appear to have gained an equal number of marks, although the examinations have been widely different in severity.

This is avoided by the system of marks for time.

Supposing 100 marks are given for every hour of written examination in Surgery, 200 for every hour (or in proportion for less periods) of oral, and 200 for every hour of practical examination; the numerical record of such examination will at once show the nature of the examination, and its different parts will be comparable with each other, no matter what the respective arrangements of the two licensing bodies may be.

For example, one licensing body may choose to give, on a particular subject, three hours of written, and fifteen minutes of oral examination. The records of its marks would show 300 for the former and 50 for the latter. Another body might give two hours written, fifteen minutes oral, and half-an-hour practical examination, the marks being 200, 50, and 100 marks, or the same as in the former case, only differently distributed. The parts of the two examinations are then comparable.

The plan will in fact be found to show not only the standard of proficiency, but the differences of the examinations, and it has the advantage of not fettering too much the opinions and methods of examination of the different licensing bodies.

The number of marks to be assigned to a particular time is a matter of importance. They should not be too few, or the wide differences of different candidates will not be properly indicated; they should not be too many, or they become unwieldy. The written examination also ought to have fewer marks assigned to it, in a given time, than the oral and the practical. The committee believe that the best plan will be to asssign 100 marks per hour for the written examination on every subject, leaving it to the Examiners to fix the number of hours and the number of questions in the hour, and the marks to be given to each question,—it being understood that the whole 100 marks must be assigned between the questions, or be given to one question if there be only one in the hour.

In the oral and in the practical examination, double the number should be given, or 200 per hour. Thus, if a candidate is under examination for fifteen minutes, he could gain 50 marks as the maximum; if for thirty minutes, he could gain 100. The committee believe this may afford an approximate expression of the numerical relation between the respective tests of the written and oral methods.

The committee would recommend, in the event of a numerical plan being approved of, that each licensing body should keep a book with the marks properly arranged in a form such as the following, in which three subjects only are introduced as an illustration:—

Date.	Name.	Anatomy.			Medicine.			Surgery.		
		Written. marks.	Oral. marks.	Practical. marks.	Written. marks.	Oral. marks.	Practical. marks.	Written. marks.	Oral. marks.	Practical. marks.

This record would show at once both the kind of subjects and the time occupied in each.

With regard to the minimum percentage of marks qualifying for the license, whatever numerical method may be adopted, the committee consider it desirable to ascertain the opinion of the licensing bodies.

It may be objected to the plan now submitted for consideration, that different Examiners will assign different values to answers. This objection is inseparable from the system of examinations, and applies to all modes of expressing results. But the mere fact of an Examiner having to keep a fixed numerical value before him, will be found to be of the greatest use to himself, and, after practice, it will be found that the opinions of good Examiners are singularly accordant. If also, in all cases, two Examiners examine every candidate, and come to independent conclusions before final judgment, the system will soon be found to work with accuracy, and to afford trustworthy results.

The Choice of Examiners.

There is a very great diversity in the mode in which the Examiners are selected by the different licensing bodies. Sometimes they are persons unconnected with the licensing body, but chosen by it to serve for a specified time from one to five years. In other cases, the Professors of a University either examine alone or with the assistance of Examiners who are not Professors. In other instances again a corporation appoints Examiners from its own body, and these serve for various periods. There is, in fact, a great diversity in the modes of appointment, and the Examiners of different bodies are necessarily persons of very varying capacity and experience. To attempt an alteration in one body without altering all would be invidious, and the committee refrain from offering any suggestion to any particular corporation. But the committee believe that, when practicable, the following points should be attended to in the selection of Examiners:—

1. There should be some teachers in every examining board.
2. The appointments of those Examiners who do not belong to the licensing body should be for a definite period, with power of re-appointment.

The committee have only, in conclusion, to express the hope that the reports of the Visiters for next year, together with those of previous years, will be such as to place before the Council a full view of the system of examination in all its branches pursued by all the licensing boards. That progress has already been made in the improvement of some of the examinations since the commencement of the visitations by the Medical Council is obvious; and it is no less obvious that much still remains to be accomplished, especially in the way of extending practical examinations in all departments.

The committee recommend that a copy of this report, as submitted to the Council, be sent to each of the licensing bodies, with the request that they will express their opinion regarding the suggestions contained in it on or before the 1st January 1868. The committee further suggest that the answers received from the licensing bodies be thereafter printed and circulated amongst the members of the General Council. ANDREW WOOD, *Chairman.*

Moved by Dr Andrew Wood, seconded by Dr Parkes, and agreed to,—"That the consideration of the report of the visitation of Examinations be postponed till next session. That, in the meantime (along with the reports of the Visiters of Examinations), that report be sent to the various licensing bodies, with a statement that it has been drawn up by a committee, but has not yet been considered by the Council, who are desirous, before discussing the suggestions contained in it, to ascertain the opinions of the licensing bodies regarding them."

3. Moved by Sir D. J. Corrigan, seconded by Mr Hargrave, and agreed to,—"That the powers and duties delegated to the Executive Committee, in accordance with sect. IX. of the Medical Act (*see* Standing Orders, sect. vi.), shall be vested in the committee, until the next meeting of the General Medical Council."

4. Moved by Mr Cæsar Hawkins, seconded by Dr A. Smith, and agreed to,—"That the Executive Committee be authorised to apply to the licensing bodies for such information as may be necessary for the due execution by the committee of such business as may be delegated to them."

Dr Apjohn informed the Council that it was not his intention to serve on the Pharmacopœia Committee.

5. Moved by Dr Christison, seconded by Dr Sharpey, and agreed to,—"That Dr Aquilla Smith be appointed a member of the Pharmacopœia Committee in place of Dr Apjohn."

6. Moved by Dr A. Smith, seconded by Dr Embleton, and agreed to,—"That a fifth volume of the minutes of the General Medical Council, the Executive Committee, and the Branch Councils, with a complete index, up to the end of the year 1867, be published without any unnecessary delay."

Gratuities were awarded to the clerks, and thanks were voted to various members and to the President.

BRITISH PHARMACOPŒIA.

WE have to remind our readers that, after the official notice of publication which has been given in the London, Edinburgh, and Dublin Gazettes of 14th June last, the Act of Parliament requires that the New Edition of the British Pharmacopœia shall supersede all other Pharmacopœias. From the careful manner in which this edition has been prepared, British medical practitioners will find an obvious advantage in conforming to this injunction, which is necessary for the safe preparation of medical prescriptions.

CHOLERA, AND EPIDEMIC CEREBRO-SPINAL MENINGITIS.

CHOLERA appears to be becoming endemic in Europe. After having raged during the winter in various parts of Brittany, where cases of it still occur, the disease has, according to the latest accounts, re-appeared on the sea-board of the Mediterranean, in Calabria, at Palermo, and in the Ionian Islands. In

India, the epidemic form of cholera had attacked the pilgrims at Benares. In Germany, certain isolated cases excite apprehensions of its return. In Paris recently choleriform attacks have been observed, which fortunately have not in general been fatal; and even in England cases have been recorded. It is quite evident that no sanitary precaution should be neglected during the warm weather which is now setting in.

The petechial or epidemic cerebro-spinal meningitis has, according to recent accounts, made its appearance in Ireland, and isolated cases, apparently of the same affection, are reported in England. It is well that practitioners should be warned of the probable approach of this new form of fever, and should be prepared to recognise and treat it.

M. CIVIALE, the distinguished surgeon, who had made a specialty of the diseases of urinary organs, and who has had a leading share in establishing the operation of lithotrity, has died in Paris, at the age of seventy-five.

PUBLICATIONS RECEIVED.

Prof. J. H. Bennett, M.D.,—Observations on Medical Education. Edinburgh, 1867.
Biennial Retrospect of Medicine, Surgery, and their Allied Sciences, for 1865–66. The New Sydenham Society. Lond., 1867.
Charles Brooke, M.A., and Golding Bird, M.D., etc.,—The Elements of Natural Philosophy. London, 1867.
A. J. Cooley,—The Mixture Book. Lond., 1867.
H. W. Fuller, M.D.,—Diseases of the Lungs and Air-Passages. Second Edition. London, 1867.
A. C. Garratt, M.D.,—Guide for using Medical Batteries. Philadelphia, 1867.
T. P. Heslop, M.D.,—Present Rate of Remuneration of the Medical Officers to Sick Assurance Societies. London, 1867.
R. M. Hodges, M.D.,—Practical Dissections. Second Edition. Philadelphia, 1867.
Dennis De Berdt Hovell,—On Pain and other Symptoms connected with the Disease called Hysteria. London, 1867.
Edwin Lee, M.D.,—The State of the Medical Profession further exemplified. Lond., 1867.
Angus M'Donald, M.D.,—Supplement to Dr Scoresby-Jackson's Notebook of Materia Medica. Edinburgh, 1867.
A. Meadows, M.D.,—The Prescriber's Companion. Second Edition. London, 1867.
C. D. Meigs, M.D.,—Obstetrics: the Science and the Art. 5th Edit. Philadelphia, 1867,
James Morris, M.D.—Germinal Matter and the Contact Theory. London, 1867.
A. S. Myrtle, M.D.,—Practical Observations on the Harrogate Mineral Waters. Lond., 1867.
F. Oppert, M.D., etc.,—Hospitals, Infirmaries, and Dispensaries. London, 1867.
J. B. Pettigrew, M.D.,—Muscular Arrangements of the Bladder and Prostate. Lond., 1867.
Thomas Reade, M.B.,—Syphilitic Affections of the Nervous System. London, 1867.
Balmanno Squire, M.B.,—Clinical Lectures (illustrated by coloured Photographs from Life) on the Diseases the Skin. Nos. 1 and 2. London, 1867.
J. G. Swayne, M.D.—Obstetric Aphorisms. Fourth Edition. London, 1867.
F. Vacher,—Seduction in Edinburgh. 1867.

PERIODICALS RECEIVED.

Amer. Jour. of the Medical Sciences,—April.
Annales d'Oculistique,—Feb. to April.
Berliner klin. Wochensch.,—Nos. 17 to 25.
Births, Deaths, and Marriages, Monthly Returns of, for April and May; and Quarterly Return, March.
Brit. Med. Jour.,—May 4 to 25; June 1 to 29.
Bulletin Général de Thérapeutique,—Feb. 28; March 30; April 15.
Dublin Quar. Jour. of Medical Science,—May 1867.
Gazette des Hôpitaux,—Nos. 48 to 73.
Gaz. Hebd. de Médecine etc.,—Nos. 17 to 25.
Gazette Médicale de Paris,—Nos. 17 to 25.
Glasgow Medical Journal,—May.
Journal de Médecine Mentale,—Nos. 4, 5, 6.
Jour. of the Scot. Meteor. Society,—April.
Jour. of Anatomy and Physiology,—No. 2.
Klin. Monatsbl. für Augenheilk.,—May.
Medical Press,—May 1 to 29; June 5 to 26.
Medical Times and Gazette,—May 4 to 25.
Nederlandsch Archief,—Nos. 3 and 4; 1866.
New York Medical Journal,—April.
Ophthalmic Review,—April 1867.
Rev. de Thérapeutique Médico-Chirurgicale,—May 15; June 1 and 15.
Viertelj. für die Prak. Heilk.,—Vol. ii., 1867.
Virchow's Archiv,—March, April, May.
Wochenblatt der Zeitschrift der Aerzte,—Nos. 11, 12, 13, 15, 16.

⁂ In consequence of the length to which the Minutes of the Medical Council have extended, certain Reviews, Periscope, and Proceedings of Societies have been unavoidably postponed.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On the Treatment of Aneurism by Electrolysis.* By JOHN DUNCAN, M.A., M.D., F.R.C.S.Ed. *With an Account of an Investigation into the Action of Galvanism on Blood and on Albuminous Fluids.* By THOMAS R. FRASER, M.D., F.R.S.Ed., Assistant to the Professor of Materia Medica in the University of Edinburgh.

(*Read before the Medico-Chirurgical Society,* 1*st May* 1867.)

PART I.

IN the spring of last year I read before the Medico-Chirurgical Society a paper on the Galvano-Puncture of Aneurism, and in it I related the history of an aortic aneurism, for which that treatment had been adopted.[1] I have now to record a somewhat similar case which terminated unsuccessfully, and one of cirsoid aneurism of the scalp more fortunate in its result.

In March 1866, Dr Macgregor of the Barnhill Hospital, Glasgow, kindly asked me to examine a patient under his charge, with a view to the application of electricity. This patient, James Lee, fifty-two years of age, robust and well-made, was at one time in the army, but for seventeen years had acted as a gentleman's servant. He was admitted to the hospital on the 19th of March 1866, principally on account of an ulcer of the leg, which speedily healed under treatment. He stated that about a month before admission he discovered pulsation in the upper part of his chest, and that soon afterwards pain and swelling supervened, which, as well as a gradually increasing debility, compelled him to give up work.

When I saw him in June, this tumour, evidently an aneurism of the aorta, projected about two inches from the surface of the chest; was nearly round, and had a diameter of more than four inches. It was situated to the right of the sternum, on the level of the second and third ribs. The pulsation in it was strong throughout, and the aneurismal bruit loud and distinct. The patient suffered occasionally from pains in the tumour, shooting also down the right arm and up the right side of the head and neck. He had no difficulty in swallowing, but when lying on his back had a little embarrassment of the respiration, and a good deal of laryngeal cough. The respiratory murmur was pure, with the exception of slight sibilus in the right lung posteriorly.

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[1] Edinburgh Medical Journal, April 1866.

On account of the rapid increase of the tumour, the apparently small amount of coagulum in it, and the comparatively slight disturbance of neighbouring organs, I agreed with Dr Macgregor that the tendency to death was by external hæmorrhage, and we determined to attempt its delay by means of electricity.

The operation was therefore performed on the 21st of June 1866. The patient was placed on his back, and two needles were introduced from the outer side, parallel to each other, and about one inch apart. The positive needle, which was coated with gutta-percha, traversed the centre of the tumour; the negative, coated with glass, was placed a little lower. The electric circle was closed at 11.58 A.M. by means of a key interposed in the wires.

Six minutes after its closure he began to complain of pain, the skin seemed to grow more tense, and a slight tympanitic note could be elicited by gentle percussion on the tumour. All these signs of galvanic action became more marked as we continued the application. He at first described the pain as a "burrowing," a "boring," a "weight on the chest;" but three minutes before the end of the operation he said it had become acute and burning. The electric current was stopped at 12.15, seventeen minutes after its commencement, as slight lividity began to show itself round the negative needle, the glass coating of which had cracked in introduction, and slightly separated from subsequent movements. On withdrawing the needles, a portion of the gutta-percha which covered the positive was left in the wound. It had become softened during the operation. Then also a quantity of gas escaped into the cellular tissue, and crepitated on pressure.

The patient passed a restless night—partly on account of another sufferer in the ward. Next morning his pulse was 100, and he had little appetite for breakfast. From the escaped gas and consequent œdema, the tumour measured nine inches from right to left, but was not much, if at all, changed from above downwards. The skin was tense and tender to the touch, so that he could not bear even slight pressure without a sickening sensation. The pulsation was not very notably diminished. The same evening the swelling began to decrease, and the pulse to fall; and by the 24th, the tumour was much as before the operation, retaining only an oval shape. The patient stated that he felt relieved, and especially that the shooting pains in arm and head were very greatly better. He complained, however, of uneasiness at the sternal edge of the tumour.

On the 27th, a small abscess formed at the point where the positive needle had penetrated, and an insignificant dry slough at the other puncture began to separate. Under a light poultice the slough came away and the abscess discharged itself; and, by the 29th, the aneurism had completely resumed its original shape and size.

From the 7th to the 24th of July it slowly increased again, becoming more uneven on the surface, while the pains returned to their former severity. The increase was mainly upwards, and the lower part felt moderately hard, and had a less distinct pulsation than the upper. On the 24th, I extracted, by a minute incision, a little ball of gutta-percha, which had remained under the skin since the operation, and had become encysted. I also repeated the galvanism, using needles coated with vulcanite, and inserting them in the upper or enlarging portion of the tumour. A battery of six Bunsen's cells was used (four had been the former number), and the action was continued for twenty minutes. It was stopped because the patient began to complain of a feeling of faintness, though the pulse did not diminish in force. The train of occurrences was nearly as has been already described,—rapid swelling with rapid subsidence of the same, pain on pressure and tension, relief, but not so marked as before, from the shooting pains, and for a short time a seeming arrest of growth. Dr Macgregor notes on the 25th, the day after the operation,—" Tumour of an oval shape; pulsation very slight, and more like the general lifting of the whole bulk of a solid body than the expansive feel of an aneurism."

Soon after this, however, the nodulated character of the tumour became more marked, and three eminences, each about one inch in diameter, were especially prominent by the 10th of August, when also they began to assume a dusky red hue. One of these was on the right side of the tumour, another near the centre, and a third, the smallest but most elevated, lay close to the sternum. The pains now became more severe, and were accompanied by numbness in the course and distribution of the ulnar nerve; and, in short, all his symptoms were rapidly getting worse.

On the 11th, while getting up, he felt something give way in the tumour, fell back in his bed, and for some time had the appearance of one dying. He was with some difficulty restored by stimulants.

On the 12th, a portion of the central nodule assumed the appearance of a blister filled with dark serum.

On the 15th, the prominence to the right began also to point, and next day a small opening formed there, from which a drop or two of dark fluid escaped. This was followed, on the 17th, by a more copious though easily arrested hæmorrhage. For some days there was no recurrence of the bleeding, but new nodules and blisters formed close to the central one, and, by the 20th, a large superficial ulcer covered the centre and left of the tumour.

At this time Dr Macgregor wrote to me, and I suggested that the operation should be repeated. He did not, however, feel himself warranted in doing so alone, and I was unable to go to Glasgow.

The rest of the case is a story of repeated hæmorrhages. On the 22d, there was bleeding from the little orifice to the right, which is described as being occupied by a coagulum that advanced and retired with each pulse in the aneurism. The 24th witnessed yet another from the same source, and, on the 25th, a stream of blood spouted from it to a distance of fully two yards. Two hæmorrhages from the central ulcer took place on the 28th, and the last was so copious that, after soaking through the bed, it formed a pool on the floor. From this the patient died.

The post-mortem examination was made by Dr Macgregor six hours after death. The large central ulcer measured three inches across, and in it were three orifices. One was patent, the two others were plugged by coagula. The orifice in the right of the aneurism admitted a large goose-quill and was also occupied by a clot. The tumour was sliced like a brain. In the centre was a firm mass having the appearance and consistence of liver, but with a circularly striated arrangement. This was surrounded by liquid blood, which filled the space between it and the wall of the tumour. The sac itself could contain a closed fist, and the central mass was about the size of a hen's egg. The aorta was largely dilated and lined by a perfect sheet of calcareous matter, which shone like porcelain and rang to the stroke of the knife. It communicated with the external sac by a smooth opening the size of a two-shilling piece situated close to the origin of the innominate artery. The second, third, and fourth ribs were eaten through, and the right edge of the sternum and lower border of the clavicle were in a state of cario-necrosis. The heart was enlarged and the semi-lunar valves were calcareous.

In sending me the notes from which I have compiled the history of the case, Dr Macgregor says,—"The post-mortem examination clearly proved that a considerable quantity of blood had undergone coagulation by the galvanism; and had the orifice in the artery been not quite so large, and the galvanism been more frequently or longer applied, success might have been the result."

It is evident that the patient's death was but little if at all delayed by the operation. The history seems to me to indicate the following as the course of events:—A coagulum, adherent to the wall, was formed in the lower part of the tumour by the first operation, and the aneurism thereafter extended upwards. This clot was increased in size by the second, and the pulsation was thereby notably diminished. Still, not being entirely occluded, the aneurism continued to grow in various directions, and ultimately, in consequence of this growth and on the occasion of a slight exertion, the clot became separated from the sac. The "giving way" sensation very probably marked the occurrence of this separation, which was followed by a speedy thinning of the aneurismal coverings. I have little doubt that even then, had I been able to operate a third time, death by hæmorrhage would have been obviated; but from personal causes I could not leave town so often as I could have wished.

Although there is nothing particularly novel in the circumstances of this case, it corroborates the conclusions to be drawn from the one I have recorded in my former paper. It is evident that the action of galvanism when carefully controlled is not productive of danger to the patient. The care taken to prevent cauterization of the sac, by avoiding contact of the exposed portions of the needles with it, obviated in great measure that tendency to inflammation which had proved a source of danger in other hands. Moreover, the insulation, pretty well attained by the glass and gutta-percha, —perfectly so by the vulcanite coating of the needles,—prevented that sloughing at the points of entrance which has on more than one occasion given rise to unpleasant results by hæmorrhage and otherwise.

While, then, little danger to the patient is to be apprehended from the operation, this case seems to show the possibility of occluding the external portion of an aortic aneurism. Although it cannot be absolutely demonstrated that the central clot was produced by galvanic action, its nature and position, taken in connexion with the experiments made on blood external to the body, with other like cases, and especially with the one I shall presently relate, make it extremely probable that it was so produced. How much was due to direct galvanic action, how much to subsequent deposition, it is impossible to say, though doubtless the greater part was immediately coagulated. But being there, it follows as a matter of course that, if a clot of the size of a hen's egg could be produced by two operations of twenty minutes each, more frequent and longer continued operations will have a yet greater effect, even to the filling by coagulum of any size of sac. In this respect I speak only of the sac external to the thoracic wall, for the hope of curing an aortic aneurism by galvanism cannot be seriously entertained. Not to speak of the impossibility of placing electrodes in accurate position in the thorax, or of the probability that whatever might be formed would be at once carried away by the rush of blood, it is certain that any clot formed under such circumstances would become free on withdrawal of the needles and would pass on to plug up the aorta or one of its branches. Galvanism in aortic aneurism is to be regarded in the same light as tracheotomy in that disease, as a means of prolonging life in exceptional circumstances, to be used only when the obvious tendency to death is by the way which it is calculated to prevent.

But while we must in this and other directions set limits to the capabilities of electrolysis, we have also examples of its perfect applicability to certain forms of aneurismal disease; and I have great pleasure in relating a case of cirsoid aneurism in which it afforded most complete relief.

About a year ago, James Gordon, a labourer, twenty-one years of age, consulted Dr Hardy of Leith, for an eczema of the scalp. In examining the head, Dr Hardy observed a cirsoid aneurism, and recommended the man to go to the Royal Infirmary. He was there cured of the eczema; but it was thought injudicious to interfere with the tumour, and on leaving the hospital he put himself under my care.

The tumour was situated on the left side of the head, and reached from the vertex to the zygomatic arch. It resembled very closely in shape and size the half of a large Jersey pear. Its broad end lay upwards, and the enlarged temporal artery entered it below. The external carotid also was distended, and even the common carotid seemed large, and beat with unusual force. In front, the left anterior temporal artery curved round to enter the tumour; behind, the left occipital could be traced from it to the muscles of the neck; while the right temporal also contributed by means of its middle branch. The whole tumour pulsated strongly, and contained no clot. By firm pressure it could be so emptied of blood that the bone felt hard and firm, but it rose again at once on the hand being removed. A loud and prolonged bruit accompanied each pulse; and the constant sounding in the ear was the great cause of the patient's distress. By compression of the carotid or left temporal artery the pulsation was greatly diminished, and the tumour rendered very flaccid; but pressure even on all its distinguishable affluents did not prevent a slight pulsatory movement.

It was evidently a case in which other means would be so dangerous and uncertain that galvanism deserved a trial.

On the 20th of July, assisted by Drs Fraser, Hardy, and Joseph Bell, I operated for the first time. The needles, having one inch of exposed surface, were entered at the vertex and placed parallel to each other, about an inch apart. Four cells were used, and the action was continued for twenty minutes. Pressure was maintained up the affluents throughout the operation. The closure of the circle produced a smart shock, causing the patient to quiver; and another, not so severe, accompanied the opening. During the action a painful burning sensation was experienced; and in this, as in subsequent operations, Gordon stated that he distinctly heard the "blood boiling" in the tumour. When the current had been continued for about ten minutes, the aneurism began to swell; and soon afterwards the tympanitic note on percussion became audible. A slight flow of blood followed the withdrawal of the needles, but it was at once checked by lint and a bandage.

The same evening there was slight œdema all over the swelling. On its subsidence next day, there was felt in the centre of the tumour a hard nodule, divided into two parts by a tortuous pulsating passage.

At a second operation, on the 4th of August, the needles were introduced one on each side of the central nodule, and six cells were used. The shocks on closing and opening caused the patient to start violently, and tremble for about a minute; but the burning pain was not greater than with four cells, and was easily endurable. The action was stopped after twenty minutes, on account of an accident to one of the cells. The effects were precisely as already detailed. The hard core was increased in size, and the rest of the tumour continued to pulsate as before. From the negative needle not having been deeply enough buried, a piece of skin not larger than a pea was cauterized and separated in a few days as a thin scale.

On the 8th of August one needle was placed in the middle pulsating passage, the other towards the back of the tumour, and farther additions were made to the consolidated mass. On this occasion the patient became a little sick from the pain, and the circle was opened after eighteen minutes' action, to relieve his uneasiness.

I was now for some time prevented from seeing the patient, but by the 28th of August no change had occurred; and on that day, with the help of Dr Andrew Inglis alone, I put the patient under chloroform, to avoid the shocks, which he greatly dreaded, and proceeded to repeat the operation. The initial shock, however, caused him to throw up his hand and draw out one of the needles; and as we found ourselves unable to control him, and at the same time manage the battery and the chloroform, I contented myself with binding up his head to stop the bleeding.

On the 31st, another failure occurred; for the patient had, contrary to orders, eaten largely before the operation; and after about five minutes' action it was found impossible to keep the needles in position, on account of his motions in vomiting.

On the 5th of September, however, a most successful repetition was made. The positive needle was introduced about an inch above the zygoma, and placed with its point directed upwards; the negative had its point directed downwards in the front of the main tumour. They overlapped about half an inch, and were more than that distance apart. A current from four cells was passed through them for twenty-five minutes. The immediate effects on the aneurism were much as before; but when I saw the patient in the evening, he stated that the bruit had entirely disappeared; and on applying the stethoscope I found that it was so. Two days afterwards, when the œdema had quite subsided, I made a careful examination. The neck of the tumour above the entrance point of the positive pole was consolidated; below that point it had collapsed. The temporal and carotid arteries had resumed their normal size. The centre of the tumour was entirely occupied by a hard mass, but between this and the surface was a fluid pulsating layer supplied by four tortuous and enlarged vessels, viz., the right temporal, the occipital, and two branches of the left temporal, which ran one before and the other behind the obliterated neck, and entered at opposite points halfway up the tumour.

On the 12th of September, I proceeded to obliterate this superficial layer, by introducing the negative needle pretty deeply behind, passing it even through the coagulum, while the positive was placed in the fluid portion slightly anterior to the middle line of the aneurism. After twenty minutes' action I observed a slight lividity of the skin over the positive needle, and at once stopped the current. Unfortunately it was too late, for next day it became evident that the skin had been cauterized over a space about the size of a shilling. The whole mass was now, however, consolidated, except where the anterior and right temporal arteries entered, and neither portion was larger than a threepenny-piece. I obliterated the anterior a week afterwards, by passing under it a needle and compressing it for twenty-four hours by means of a piece of cork, secured by a figure-of-eight silk thread. The same process was not successful with the right temporal, and the patient would not allow me to repeat the attempt, as he had returned to his work, which he did not wish interrupted. The rest of the history is entirely favourable. The slough, much smaller than had been anticipated, was very dry and tough, and took a month to separate. But, six weeks after the last galvanic operation, the cicatrix was the only trace that remained of the tumour, with the exception of a slightly enlarged right temporal and a barely distinguishable occipital artery. The man has continued to work since that time, and there is no tendency to a development of the disease from these sources. If there were, a needle passed under or through these small vessels would serve effectually to obliterate them.

The very satisfactory termination of this case should, I think, be sufficient to establish electrolysis as a valuable therapeutic agent, well suited to the treatment of cirsoid aneurism. The only real difficulty which attended the operations was to get a maximum of effect without endangering the skin. I had previously met with the same difficulty in applying electrolysis to a nævus in the eyelid of a child. Very small needles were then used, and the current was continued for a few minutes only. Only a small central induration was, in fact, produced; and, as some impatience was expressed, I resorted to subcutaneous ligature instead of trying a more efficient application of the battery. Till the last operation on Gordon's head, I succeeded in erring on the safe side; but, notwithstanding, nay even in consequence of the mistakes in that one instance, some facts may be elicited for guidance in future. The first operation affords, perhaps, the best data for estimating the coagulating power of electricity under given conditions. As I have already said, four cells of a Bunsen's battery were used; the period of action was twenty minutes; the active portion of each needle[1] was one inch in length, and their thickness No. 16 of the wire guage. A hard coagulum was formed, of which the breadth was an inch and a third; but a narrow uncoagulated passage remained rather nearer the negative than the positive electrode. Now this passage was, in all probability, due to a vessel lying just within the surface of the coagulum, which would thus be perfectly continuous behind it, and may in any case be very fairly estimated at one and a quarter inch in breadth and rather less in thickness. The length was one-fourth greater than that of the exposed steel, to which, of course, it will always correspond.

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[1] The needles which I used were made of steel, some gilt, others not so. The difference in action is unimportant; but the former want sharpness, the latter rust through use. I have sometimes had them gilded, and the points afterwards sharpened.

The intermediate operations afford no reliable data for such an estimate, on account of the relation which the needles bore to each other and to the already-formed clot; but the last is again of some importance. All other conditions being the same, the negative needle was placed perhaps not quite three quarters of an inch from the surface, the positive certainly not half an inch. The former brought the coagulum, in which it lay, up to the surface; the latter cauterized the skin.

From these facts it may be safely concluded—

1*st*, That both needles are efficient.

2*d*, That, under the circumstances named, they are together capable of producing more than one cubic inch of coagulum, the greater part of which is due to the positive pole.

It must not be forgotten that we had here to deal not with liquid blood only, but with blood through which was scattered a quantity of animal membrane in the shape of arterial tunics. Under the action of electricity the blood would coagulate on these, and by the acids and alkalis set free they would themselves be cauterized or inflamed. We had in them an adjuvant, which would increase the total amount of clot, and inflammation might be supposed the sole cause of efficiency at the negative electrode. Still, the action was immediate, not progressive, as it would have been had inflammation been the cause of coagulation; and for this and other reasons, to be afterwards detailed by Dr Fraser, I believe that even in liquid blood the negative pole would not be totally inoperative. Meanwhile it is practically proved to be useful in a cirsoid aneurism, and to have materially aided in the cure of Gordon's disease.

In one respect, the presence of arterial walls gives rise to inconvenience; it produces a not inconsiderable amount of pain. In this respect the records of cases differ greatly. In most of them the pain has been described as of the most excruciating character; but, on the other hand, the first of the three subjects of aneurism on whom I operated suffered absolutely no pain, and with Lee it was comparatively trifling. In the cirsoid aneurism the shock which accompanied the closure of the circle was bearable with four cells, though it caused the patient to start; but he was utterly unable to control himself when six cells were used. The opening of the circle was nearly as painful, and during the passage of the current a burning sensation was felt, which, though it was not unendurable, and did not palpably increase in intensity as the action continued, was yet undoubtedly severe. I am of opinion that the cause of this discrepancy lies mainly in the amount of solid tissue under the electric influence. In the earlier applications of galvano-puncture there was either no insulation at all, or an insulation confessedly defective. In Mr A.'s case the walls did not suffer at all, in Lee's but slightly, while in Gordon's the needles passed through a considerable quantity of sensitive matter. Moreover, the smaller the aneurism operated on, supposing the insulation perfect, the greater probably will be the pain; for, in a small one, the free acids and alkalis will be much more likely to reach the aneurismal tunics, and the exposed points of the needles will be more apt to come in contact with them.

The pain, however, is of little moment, if the patient be under the influence of chloroform. The great object, and, I may add, difficulty in an ordinary aneurism, is to prevent that amount of irritation which is liable to excite a dangerous inflammation. On this ground, as on every other, there seems no cause for apprehension in a cirsoid aneurism; and for that form of disease galvano-puncture may, I think, be regarded as the safest, simplest, and most certain method of treatment. Ligature of large arteries, like the carotid, is extremely dangerous, and has been singularly unsuccessful. Out of eighteen cases, seven died, and only two were permanently cured. The perchloride of iron, though it has been successfully injected, is also liable to failure, and has, moreover, certain well-known risks attending it. Extirpation, ligature, and incision have been tried, but hold out little inducement to repeat them. Galvanism, however, has been successful in the only two cases in which it has been used; and, though several operations were required in each, not the slightest accident happened in either.

PART II.

A number of experiments were undertaken for the purpose of determining the method by which galvanism produces its effects on aneurism. In the remarks and details which follow, it must not be supposed that we have examined the question in an exhaustive manner. Our investigation has, however, been sufficient to throw a considerable amount of light on the practical bearings of the subject, such as, the time required to obtain a satisfactory result, the value as a nucleus of the products of either pole, and the power of battery advisable, as well as the best methods of avoiding shock or pain, of protecting from cauterization the sac and superficial textures, and, generally, of obviating the sources of danger. Many of our results are merely confirmatory of observations already made by others, but which had been undertaken for purposes quite unconnected with the present subject.

Several statements of a most extraordinary description have been published on the effects of galvanism on albuminous fluids; and one writer—Dutrochet[1]—even flattered himself that by the aid of galvanism he could not only cause coagulation, but also produce vibrating muscular fibres in solutions of albumen. One of the earliest really valuable contributions to the subject was by Dr Scudamore, in 1824.[1] He found that a galvanic current passed through blood formed at the negative pole a mottled scum with copious disengagement of gas, and, at the positive, a dense black coagulum which afterwards assumed the appearance of charcoal. In 1832, Müller[2] published an investigation in which he described many of the effects of galvanism on blood and on white of egg, and believed that the results were due to decomposition of their salts and to oxidation of the electrodes. Ancell,[3] Baumgarten and Würtenburg,[4] Steinlein,[5] and, most recently, Neumann,[6] have since adhered to his conclusions. Steinlein, in addition, distinguished the effects of various electrodes, and asserted that with a weak current no change occurred in the albumen when the platinum poles were used, while electrodes of oxidizable metals caused a rapid coagulation at the positive. In this, Steinlein supported the opinion of Schuh,[7] who, however, had differed from him in referring the curative results mainly to inflammatory changes.

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[1] Ann. des Sc. Nat., 1831.

Apjohn, Bellingham, and Ristelli,[8] have ascribed the coagulating powers of galvanism to the free acid which appears at the positive pole when salts are present in the electrolyte.

The most contradictory statements occur on the effects of friction-electricity. Gerhard, Hufeland, Kielmeyer,[9] and Richardson,[10] are found asserting that electric currents retard the coagulation of blood, while Scudamore[11] and Schroeder van der Kolk,[12] with equal distinctness, maintain that it increases and hastens the formation of clots. For our purpose, these statements are unimportant. At an early stage of this investigation we satisfied ourselves that chemical decomposition was by far the most efficient, if not the only, cause of those actions on albumen which render galvanism a valuable means of treating aneurism. We accordingly restricted our inquiry to the effects of galvanism or chemical electricity, as it has been perfectly demonstrated that a direct ratio exists between the quantity of electricity passing through any given electrolyte[1] and the amount of resulting decomposition, and that the electricity developed by even powerful friction-machines is extremely small as compared with that which may be obtained from the weakest form of voltaic or galvanic battery.

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[1] An Essay on the Blood, comprehending the chief circumstances which influence its coagulation, etc., p. 56, *et seq.*

[2] Elements of Physiology, translated by Baly, vol. i. p. 133; and Poggendorf's Annal., 1832.

[3] Lectures on the Physiology and Pathology of the Blood. *Lancet*, 1839–40.

[4] Medical Times and Gazette, 16th Dec. 1864, p. 620; and Wien. Zeitschrift, 1853.

[5] Zeitschrift der k.k. Gesellschaft der Aerzte zu Wien, April, 1853.

[6] Archiv für Anat. Phys. und Wissen. Medicin. Reichert und Du Bois Reymond. 1865.

[7] Zeitschrift der Wien. Aertze, 1850.

[8] Gazette Médicale, 1847.

[9] Quoted by Dr J. Franz Simon. Animal Chemistry (Sydenham Society), vol. i. p. 116.

[10] The Cause of the Coagulation of the Blood: Astley-Cooper Prize, 1858, p. 96.

[11] Op. cit., pp. 54–56.

[12] Quoted by Simon, op. cit., p. 117.

Exp. I.—A solution of egg albumen, of sp. gr. 1055, and of slightly alkaline reaction, was placed in a conical glass, which it occupied to the depth of 1·5 inch. Two platinum needles, connected with a six-celled Bunsen's battery, were suspended perpendicularly in this solution, 0·75 inch apart, and dipping 0·75 inch into it. The circuit was closed by means of a key, and, immediately, bells of gas appeared on both electrodes, and increased rapidly in quantity till they formed a complete sheath round each, when many successively detached themselves and rose to the surface of the liquid. At the negative pole, the bubbles were all of minute size; but at the positive, many large bells were formed by the coalescence of smaller ones. In thirty seconds, test-paper exhibited a strong alkaline reaction at the negative and an acid at the positive electrode. In one minute, the positive pole had surrounding and adhering to it a thin sheath of opaque substance. This coagulum increased rapidly, and in five minutes a considerable layer surrounded the pole and extended from it in the shape of flakes and threads and opaque coverings of the larger oxygen bells. At the lowest portion of the electrode, it extended with much less rapidity than at and near the surface of the solution, so that it assumed the form of a pretty regular cone. By this time, the negative needle was completely enveloped in a mass of froth, which also possessed a conical configuration, though there was a marked extension of the frothy growth towards the positive electrode. In ten minutes, the whole surface of the liquid was covered with a mass of froth, which had a prominence surrounding each needle. The circuit was opened in twenty minutes. It was found that a dense opaque substance of conical form, about 1 inch in depth and 0·5 inch in greatest diameter, entangling a multitude of bells and having an acid reaction, had formed at the positive electrode. At the negative needle, a perfectly-defined irregularly-conical substance of alkaline reaction was found, rather more bulky than the positive coagulum, having the appearance of a clear and colourless jelly, and enclosing a mass of consistent froth. A small quantity of unchanged white of egg occupied the remainder of the glass.

The two results were placed in contact with distilled water. The clear jelly which was formed at the negative electrode gradually swelled up, but remained undissolved for three days. The opaque substance derived from the positive electrode was apparently unaffected by water; a portion retained its characters until it commenced to decompose, and another portion was found to be soluble in heated caustic potash, and formed a deep brown solution.

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[1] The compound decomposed by electrolysis (ἤλεκτρον and λύειν): these terms were introduced by Faraday, and are now generally employed.

Exp. II.—A trough was made with gutta-percha, across the middle of which a piece of De la Rue's parchment was stretched so as to divide it into two cells, each of which had a diameter of 1 inch. All the other conditions being the same as in the first experiment, an electrode was placed in each cell. On closing the galvanic circuit, the same phenomena also occurred. In eight minutes, the coagula had become irregular by their lateral and anterior extension being greater than the posterior; and in the positive cell, lines of opacity were seen extending towards the parchment partition, and adhering to it. In thirty minutes, there was almost no unchanged albumen in either cell. The positive contained an irregular opaque coagulum, with a number of partially detached threads and patches. A somewhat dense sheet enclosed this coagulum, and adhered slightly to the surface of the partition, while all its contents were strongly acid. In the negative cell a quantity of consistent froth, about 0·25 inch in diameter, surrounded the electrode, beyond which there was a clear area limited by a thin opaque membrane, which adhered slightly where it was in contact with the partition. At first sight, this clear area appeared to consist of unchanged albumen; but, on removing the contents of the cell, it was found to be in reality a very firm and clear jelly, of a conical form, and with the diameter of 1 inch at the surface and 0·25 inch at its lowest point or apex. There was a very small quantity of liquid albumen in this cell, and it, as well as the frothy substance and the jelly, gave a powerfully alkaline reaction to test paper. The other characters of these results agreed with those of the first experiment.

Exp. III.—Serum obtained from the blood of a sheep was treated in the same way, with exactly the same results.

Exp. IV.—The fluid removed from a hydrocele was also acted on by galvanism, and yielded the same forms of modified albumen at each electrode.

Exp. V.—No special results were obtained when defibrinated blood was similarly treated, except a slight modification of the clots, which was due to the presence of colouring matters. This was principally a blackening of the coagulum at the positive electrode, by the action on blood pigment of the acid radicles which are there set free.

Exp. VI.—To obtain pure albumen, white of egg was dialyzed according to the process of Graham. The result was evaporated, at a very low temperature, to the sp. gr. of 1056, and treated with galvanism in the same way as in the preceding experiments. We found that changes were produced at both electrodes, which only differed from those in white of egg by the smaller quantity of the results. This was very unexpected, as the absence of inorganic matters in solutions of pure albumen should have modified the effects of galvanism to an important extent. A portion of the solution was therefore dried, and, on incineration, a small quantity of inorganic matter was obtained, proving that we had not succeeded in completely eliminating the salts. Until we obtain an absolutely pure albumen, we can fortunately make use of some experiments by Smee,[1] with an albumen which he believed to be perfectly free from inorganic impurities.

Our experiments were modified by substituting albuminous fluids of different specific gravities, and by approximating and lengthening the distances between the electrodes. As might be supposed, a dilute solution yielded a mere flocculence, while one of much higher specific gravity than blood rapidly yielded the characteristic results; but, beyond a certain point, the growth of the clots was impeded, in the latter, by the interruption to the galvanic current which was produced by the dense masses formed.

Exp. VII.—Complete anæsthesia was induced by chloroform inhalation in a small mongrel dog, and the left femoral artery was exposed. Two German silver needles, bent at an angle of 60, and insulated beyond the bend with sealing-wax, were connected with a six-celled Bunsen's battery, the circuit of which was closed and opened by a key. They were then inserted into the exposed artery a short distance beyond their angles, with their points towards each other and one inch apart,—the needle which was next the heart being positive to the distal one. On closing the circle a slight tremor occurred. In twelve minutes, the pulsation between the two needles, and for a short distance below them, had ceased; and, on opening the circuit, in fourteen minutes, a faint tremor was again observed. The vessel was ligatured a short distance above and below the insertions of the needles, and the intermediate portion was dissected out and removed. The artery was carefully opened with a pair of scissors, and its whole calibre was occupied by a dark clot containing a small quantity of froth, and this clot extended a short way beyond the points of insertion of the needles. Opposite to and slightly below the point at which the positive needle had entered, a small surface was observed in the interior of the vessel, which had apparently been cauterized by the needle.

Exp. VIII.—A small terrier dog was put under the influence of chloroform, and its abdominal aorta was exposed. The same battery was used as in the previous experiments, but larger needles were employed, and they were placed about 0·75 inch apart, the positive being proximal to, and the negative distal from, the heart. A slight shock occurred when the circuit was closed. In four minutes the pulsations between the electrodes were barely perceptible; and, in twelve minutes, when the circuit was opened, they had completely disappeared, remaining distinct above and down to the proximal needle; while, below the distal one, the artery was slightly collapsed, and appeared empty. It was found that its whole calibre was occupied by a dark clot, which extended from the point of insertion of the higher electrode to a considerable distance beyond the lower. The artery immediately above the electrodes was empty, as the animal had been bled to death.

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[1] Proceedings of the Royal Society of London, vol. xii., 1862–63.

Exp. IX.—The left femoral artery was exposed in a small mongrel dog, which had been rendered unconscious by the inhalation of chloroform. Similar electrodes and the same battery were used as in the other experiments, and the needles were introduced 1 inch from each other at their points of insertion; but, in this experiment, the proximal needle formed the negative, and the distal the positive electrode. A slight tremor occurred on closing the circle. In five minutes, the pulsation between the needles had distinctly diminished; in six minutes, it could be distinguished immediately below the proximal needle only; and, in fifteen minutes, it had completely ceased within the galvanic circle. The application was stopped in sixteen minutes, and the wound sewed up. The dog was killed in seventy hours. On opening the artery, a firm, slightly adherent clot was found, which apparently filled the vessel; it was 1 inch in length, and consisted of a small colourless portion at the proximal end (negative needle), and of a larger portion of a reddish brown colour.

Exp. X.—The right carotid artery and the right internal jugular vein were exposed in a dog. The same battery and similar needles were employed. The positive electrode was introduced into the vein, and the negative into the artery, at a distance of an inch from each other, and in such a manner that the two points were opposite, and the bent portions of the electrodes in the direction of the blood-streams. In eight minutes after the closure of the circle, no pulsation could be perceived immediately above the entrance of the negative needle into the artery, and a black clot could be distinguished in the vein. For about 0·75 inch below the electrode in the artery no pulsation occurred after ten minutes, while it was very distinct nearer the heart. Bells of gas could be discovered both in artery and vein, in the neighbourhood of the needles. In seventeen minutes, the circle was opened. It was observed that in the vein there was a black areola of cauterization surrounding the penetrating needle, but no hæmorrhage occurred when it was withdrawn. A little force was necessary in removing the negative needle from the artery. The dog was immediately killed. A small thin clot was present in the vein about 0·5 inch in length, and in the artery a large one with gas bubbles extended about 2 inches below the perforated point.

These experiments on bloodvessels have given perfect evidence of the power of electrolysis to occlude them, and have also shown that this efficiency does not pertain to one electrode alone, but is shared in by both. Their bearing on the treatment of cirsoid aneurisms is very evident.

Some attempts were now made to discover the exact effects on blood contained in aneurismal sacs, or, at least, on such large quantities of living and moving blood as would enable us to ascertain whether appearances were produced similar to those which occur in albuminous fluids and in defibrinated blood. With this view, efforts were made to produce aneurisms in dogs by incisions into arteries. Had we succeeded we should have been in a position to distinguish, without hesitation or dubiety, the effects of the galvanism from those changes which spontaneously occur in living blood. Our success was, however, limited to the production of short-lived pulsating hæmatomata, as we had the misfortune to operate on dogs which, for our purposes, possessed most unfortunate powers of curative vitality. We eventually succeeded in designing a form of apparatus which possessed many of the required conditions. Two glass hemispheres were constructed which were furnished with adapting screws to admit of their junction, and of the consequent formation of a globe capable of containing five ounces of fluid, and having two tubes entering at opposite points. By attaching india-rubber tubing to these, the apparatus could be connected with a bloodvessel. There were other two perforations in this globe to admit the elctrodes, which might, by a simple mechanical arrangement, be readily introduced into or withdrawn from the interior of the globe, and an opening at the top permitted the escape of contained air as the blood entered.

Exp. XI.—The left femoral artery of a large retriever mastiff was exposed and divided, and into each portion a nozzle, connected with the india-rubber tubing of the glass aneurism, was inserted. The entrance of blood was easily controlled by attached clips, and a temperature a little above 85° Fahr. was maintained by placing the globe in a hollow water-bath. On opening the clips, the blood flowed freely into the aneurism, and, as soon as the contained air had been expelled, the galvanic circle was closed by means of a key. Gas bells, in a short time, rose to the upper part of the aneurism, and surrounded the electrodes which were there situated; and, through the glass wall, we could readily observe frothy masses slowly growing and accumulating round each pole, from which now and then a very small cluster of bells detached itself and was carried off,—first, in those irregular transits which marked the course of the blood-stream in our aneurism, and then suddenly down the exit tube to enter the distal portion of the divided bloodvessel. We had already found that in this apparatus the blood might be expected to coagulate spontaneously, in a very few minutes. After eight minutes, pulsation was yet perceptible in the exit tube, when the galvanic circuit was opened, and the entrance of blood stopped by closing the india-rubber tubing. The electrodes were withdrawn, and on unscrewing the hemispheres a little fluid blood was found, and a large coagulum, possessing nearly the exact configuration of the interior of the glass aneurism. At the surface two round holes were seen, which had been occupied by the electrodes. Immediately surrounding the orifice of the positive pole was a black ring, and beyond this a firm clot, with entangled gas bubbles. The position of the negative electrode was surrounded by a quantity of froth intermingled with clotted blood. Both were perfectly distinguishable from the normally coagulated blood, and both possessed greater consistence and tenacity than it. A section was made through the globular clot at the points where the electrodes had entered it. It was found that the electrolytic clots extended an inch into the mass, in a conical form. The negative had a diameter of 0·75 inch at the surface or base, and had a markedly alkaline reaction; the positive was 0·5 of an inch at its base, and was strongly acid. A few black lines were also exposed in this section, which were apparently connected with the positive electrode, and proceeded from it in wavy and fantastic courses, to be lost in the general blood mass. A microscopic examination of the blood revealed many of those curious marginal modifications of the corpuscles which Rollet[1] and Neumann[2] have fully described, and to which the attention of this Society has been already directed by Dr Wright.

In attempting to solve the question how galvanism produces a blood clot it is necessary to ascertain whether the chemical effects of electrolysis are sufficient to account for the changes which occur. Our data all point to the conclusion that such is the case. There is no evidence to support the view that the mere passage of electricity or of galvanism through soluble fibrin converts it into a coagulum. In the first portion of this paper, it has been shown that when the electrodes are inserted at a short distance from each other in an aneurism, two separate areas of hardness and condensation result, with an intervening unchanged space. Through this space the galvanic current must have passed, and yet the fibrin in it has remained uncoagulated. The same was observed with our glass aneurism. Did any power of coagulating fibrin or albumen exist apart from chemical reaction, it would be reasonable to expect such an effect after the passage of an electric current; but the evidence tends rather to show, from experiment and accident, that the reverse is the case, and that fibrinous coagulation is retarded by friction-electricity.

Albuminous fluids, absolutely free of inorganic impurities, are acted on, but the results may be produced by chemistry alone. Smee has proved that the threads and patches which appear at the positive electrode, after the protracted passage of a galvanic current through a solution of pure albumen (and which he attempts to prove are really fibrin), may be exactly imitated by the direct action of oxygen: the electrolytic decomposition of water being, therefore, sufficient to account for their presence. The principal salts found in white of egg are chlorides, phosphates and sulphates of potassium, sodium, calcium, magnesium, and iron. A galvanic current causes the decomposition of these, and the appearance of the acid radicles at the positive, and of the basic radicles at the negative electrode. In this way, selecting the predominant of these substances, chlorine, acid-albumen, and oxygen will appear at one pole, and free sodium and potassium, with nascent hydrogen, at the other. Sodium and potassium will, however, become immediately converted into soda and potash by their action on water, and these combined, on the one side, with chlorine and oxygen at the other, are sufficient to account for the changes which immediately occur. Soda and potash, in very concentrated solutions, convert white of egg into a clear and firm jelly; chlorine and oxygen cause it to assume an opaque and flocculent form. A gentle stream of hydrogen with the basic, and of oxygen with the acid radicles, will produce a clear jelly with entangled froth, and an opaque substance with mingled gas bubbles, in no way distinguishable from the results which occur at the negative and positive electrodes.

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[1] Veränderungen an den rothen B. Körperchen, in den Sitzungsberichten der Wiener Akad. d. Wiss. V. 46, 47, 50.

[2] Op. cit.

The changes produced in blood may be accounted for in a similar manner. In man, the principal inorganic constituents of this fluid are chlorine, sulphuric and phosphoric acids, sodium, potassium, iron, calcium, and magnesium. Electrolysis transfers the acids to the positive electrode along with oxygen, and the bases to the negative along with hydrogen. The suspended albumen is attacked at both poles, and effects follow which experiment can readily demonstrate to be the consequences of the chemical action of acid radicles at the positive, and of basic radicles at the negative electrode. The black coloration of a portion of the positive clot is probably due to the action of nascent oxygen on hæmatin. The froth formed at both poles, and its different appearances and proportion, are obviously the effects of the natural and increased viscidity of the blood, and of the different proportional rapidity with which oxygen and hydrogen are formed in the electrolysis of water. That the gas should be entangled by the blood is of considerable importance, as the size of the clots is thereby increased and their curative value proportionally enhanced. Schuh,[1] Baumgarten and Würtenburg,[2] Althaus,[3] and Garratt,[4] doubt the efficiency of the negative pole, and even propose modifications to dispense with its insertion into the aneurismal sac. We will not dwell on the methods by which it is proposed to accomplish this, as our results suffice to show that the negative electrode is at least as valuable as the positive. The mass of frothy substance is certainly not so dense as the clot at the positive pole, but it is of sufficient consistence to remain undissolved for several days, and it has the great advantage of being larger.

A certain quantity of gas passes through the blood without being entangled or absorbed, and either accumulates at the highest portion of the sac, or is removed by the blood-current. In the latter case, there is not the slightest reason to apprehend danger from its entrance into the circulation, as it is generated so slowly, and in such extremely small bubbles, that the total quantity produced during an ordinary application is quite unimportant as a cause of risk to life. If it should be found that this gas produces local distention of the sac or other inconvenience, its appearance might be prevented by covering the negative electrode with a layer of metallic peroxide—possibly with lead peroxide—the oxygen of which would be at once attacked by the nascent hydrogen, and water, in place of gas, would be produced.

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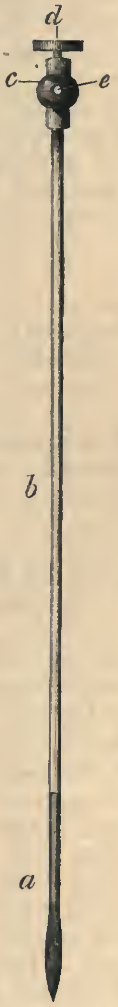
[1] Wien. Zeitschrift, 1850. [2] Op. cit.

[3] Med. Times and Gazette, 1862; and, On the Value of Galvanism in the Treatment of Paralysis, etc., 1866, p. 16. Dr Althaus has apparently modified his views on this point, since the publication of the two papers referred to. In his recent communication "on the Electrolytic Treatment of Tumours and other Surgical Diseases" (British Medical Journal, 11th and 16th May 1867), the value of the positive needle is denied, and the introduction of the negative alone is strongly recommended, on the "principle, that it is to the use of this pole that we have to look for the cure of aneurism."

[4] Electro-Physiology and Electro-Therapeutics, etc. By Alfred C. Garratt M.D. Boston: 1860. P. 651.



Steel is certainly the best form of electrode to employ, from the ease with which it can be introduced. If it be not gilded, the positive pole will be rapidly corroded; but when the wire is about 0·075 inch in diameter, it is not acted on to such an extent as to have its efficiency seriously impaired. Besides, when blood is the electrolyte, its corrosion results in the formation of ferrous chloride, and, probably, of ferrous sulphate,—salts which coagulate albumen, and thereby increase the wished-for result.

It is of importance to protect the textures perforated by the needles from the electromotive force, as, otherwise, pain and inflammation of the aneurismal coats, with probably dangerous hæmorrhage, would be caused. This has been a great obstacle to the adoption of galvanism in the treatment of aneurism, and we made many experiments with various insulating materials to overcome this objection. Glass and sealing wax, varnish of various kinds, caoutchouc and shellac, were successively subjected to trial without giving satisfaction. The more brittle of these substances splintered, and the others were peeled off by the resistance of the perforated textures. At Dr Wright's suggestion, and with the aid of Dr Smith's valuable practical knowledge, this difficulty has been overcome, and we can now recommend for the purpose a coating of vulcanite. This can readily be placed round the needle, and from its smooth, extremely hard surface, and its property of nearly complete insulation, it may be introduced into the sac with great facility, and without producing the slightest cauterization.[1]

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[1] The woodcut represents the needle now recommended, and is of the exact size. Its thickness is 0·07 in., or No. 16 of wire-gauge. The non-insulated steel portion, *a*, is about $1\frac{1}{8}$ in. in length; *b* is the insulated portion, of about $3\frac{2}{8}$ in. in length, and previous to the application of the vulcanite (or ebonite) this portion of the needle is thinned to allow the layer of vulcanite to be flush with *a*; *c* is the brass head, having a screw, *d*, to fix the wire from the battery or key, which is inserted into the hole, *e*.

The purpose of this portion of the paper has been served if it has succeeded in showing what effects galvanism produces in blood, and how these are caused. The value of electrolysis seems to depend on its bringing in contact with a coagulable fluid a number of substances which produce coagulation, and which are generated so slowly and gradually, that the areas of their action may be strictly limited. It, at the same time, supplies, at the points of action, rods of support, to which the changed albuminous particles naturally attach themselves, and on which the blood-clots grow until they are sufficiently matured to adhere to the internal surface of the aneurismal sac, or at least to occupy a considerable portion of the cavity.

ARTICLE II.—*Cases of Circumscribed Crude Tubercle in Bone and Muscle.* By THOMAS ANNANDALE, F.R.S. Edin., Lecturer on Surgery, Assistant-Surgeon Royal Infirmary.

THE pathological conditions met with in the two following cases are of such rarity that an account of them appears to me to be worthy of record.

CASE 1.—*Deposit of Crude Tubercle in the Shaft of the Tibia.*

On the 28th of June 1866, I was asked to meet in consultation Dr Burgess of Balfron in regard to a case requiring amputation of the leg. The patient, a delicate girl, æt. 22, had suffered for ten years from strumous sores in different parts of her body, which, however, were now healed.

Three months ago, a swelling formed over the anterior and inner aspect of her right tibia, at a point corresponding to the lower part of its middle third. This swelling was at first firm to the feel, and connected with the bone, but it gradually became softer, the skin over it ulcerated, and exposed the surface of the bone soft and roughened. Diffuse inflammation and suppuration attacked the soft textures of the whole leg and foot, and a considerable portion of these textures became destroyed, leaving large granulating sores, which discharged profusely. The patient began to suffer intense pain in the bone, and begged that the limb might be removed, or something done, to give her relief.

On examining the leg, I found that the skin and cellular tissue on the outer side of the foot and leg had disappeared, and left a large unhealthy granulating sore, the edges of which were undermined for some distance. On the anterior aspect of the leg, at the situation of the original swelling, there was another granulating sore the size of a five-shilling piece. At the bottom of this ulcer the bone lay exposed, its surface being vascular, soft, and having numerous small osseous spicula springing from it. The patient had also an enlargement of the right lobe of her liver, which was not, however, at the time causing her any distress.

In consultation, it was decided that the limb ought to be removed; and this decision having been told the patient, she at once consented, and I accordingly proceeded to remove the limb at the knee-joint after Mr Carden's method.[1]

A week after the operation the patient's strength and general condition had improved, and she continued to do well until the end of July, when ascites came on, and proved fatal on the 4th of August.

On making a post-mortem examination, Dr Burgess found that the enlargement of the liver depended upon circumscribed deposits of a yellowish opaque substance.[2] Some of this he sent me, and I found it to be of the same nature as that which was found in the tibia, the pathology of which will now be described.

Dissection of the limb removed.—The soft textures of the whole leg and foot were more or less infiltrated with pus. The knee and ankle-joints were healthy.

The tibia was enlarged at the lower part of its middle third and upper part of its lower third. About the centre of this enlargement, on its anterior and inner aspects, there was an exposed and roughened surface of bone the size of a five-shilling piece. Some portions of this surface were covered with fine granulations, others had small spicula of bone springing from them. The surrounding periosteum was thickened and vascular, and had a few spicula of new bone developed in it. The bony tissue in the neighbourhood of the ulcer was vascular and softer than natural.

At the outer side of the bone, but on the same level, there was a circumscribed collection of crude tubercle the size of a small filbert, lying immediately under the periosteum. The tubercle was firm in consistence, and presented no appearance of softening, but on carefully removing it, the bone on which it rested was soft and more porous than usual.

The fibula was slightly thickened at the corresponding point, but there was no breach of its surface.

A fine section having been made through the tibia in its longitudinal direction, the following appearances presented themselves:—In the interior of the bone, at a point corresponding to the affected external portion, there was a circumscribed deposit of yellow crude tubercle. (The illustration is taken from the section, and merely shows the situation and shape of the deposit, and the thickening of the surrounding bone.) The deposit showed no symptoms of softening—was about one inch and a half in length—was surrounded by a white and soft membrane, and completely filled up the medullary canal of the bone. The cancellated texture had disappeared at the point of the deposit, the tubercle having, as it were, taken its place. The outer tables of the bone were thickened for some distance above and below the deposit. The external ulceration of the bone had only destroyed one half of the thickness of its outer table, and did not, therefore, communicate directly with the medullary canal or tubercle. Microscopic examination of the deposit showed imperfect and shrivelled cells, granules, and oil globules.

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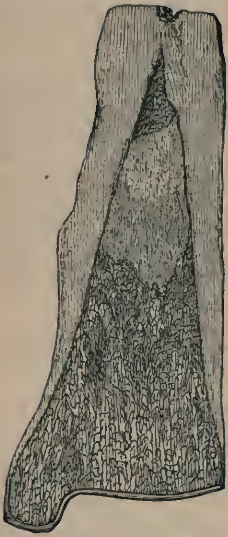
[1] Having only one gentleman to assist me, and his attention being directed to the administration of chloroform, I found the following method of operating of service. Having dissected up the anterior flap, in which there were no vessels of any consequence, I sawed completely through the bone; this allowed me to grasp the popliteal vessels with the finger and thumb of my left hand, above where they required to be divided, then with a sweep of the knife I cut the posterior flap, and so separated the limb without any hæmorrhage occurring.

[2] The lungs were quite healthy, and showed no trace of any similar deposit.



Remarks.—The history and progress of this case, and the appearances found on dissection, all, I think, warrant the conclusion that the disease was tubercular in its nature.

Tubercle, whether circumscribed or infiltrated, when occurring in connexion with bone, is usually met with in the cancellated texture of spongy bones, or in the articular extremities of long bones—very rarely in the shafts of long bones.

Mr Hewett has recorded a case which resembled the one just related in many points. In Mr Hewett's case, the femur was the bone affected.[1]

A matter of practical interest in connexion with this case was the severity and extent of the secondary affections of the soft textures of the limb, although, apparently, there was no direct communication between these tissues and the diseased bone. The results in this case are only confirmatory of the following passage which occurs in Drs Jones and Sieveking's article on Tubercle of Bone:[2]—"The adjoining soft parts are often extensively involved, and secondary effects produced, which do not at first sight appear connected with the original malady."

CASE 2.—*Deposit of Tubercle in the Rectus Femoris Muscle.*

In June 1866, Mr ——, æt. 45, was brought to me by Dr Alexander on account of a swelling on the anterior aspect of his left thigh, which first appeared about six months ago, and has since been gradually increasing in size. The patient when young suffered from strumous inflammation and suppuration of the glands of the neck, but is now strong and healthy, with the exception of his present local complaint, which is beginning to interfere with his walking.

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[1] Trans. Path. Soc. for 1850-52.

[2] Pathological Anatomy, p. 775.

On examination, there was a tumour the size of a hen's egg on the anterior aspect of the thigh, at the lower part of its middle third. The tumour, which was connected with the rectus femoris, had evidently originated in that muscle. It was firm, but somewhat elastic to the feel,—not so hard as a fibrous tumour, and scarcely so elastic and soft as a medullary cancer. Its margins were not very well defined, but the tumour was otherwise circumscribed. At the consultation, it was decided not to interfere at present with the tumour, but to watch its progress.

Two weeks after, I again saw the patient, but the tumour, with the exception of feeling a little softer at one point, remained in much the same state.

Three weeks after the last inspection, the tumour was again examined, and I then found a distinct fluctuation at the point, which had become softer. An incision was made into this part of the swelling, and about an ounce of curdy tubercular pus flowed out of the wound. After the operation, the opening continued to discharge ill-formed and characteristic tubercular matter; the soft textures in the neighbourhood became swollen and inflamed, and a kind of chronic and diffuse suppuration took place in them, requiring other incisions to be made. The pus evacuated by these incisions was all of the same unhealthy nature. The original swelling began to diminish in size, and the wound made into it to heal; but four months after the first incision the soft textures of the lower part of the thigh continued more or less swollen and inflamed,—being sometimes better and at other times worse. It once or twice appeared as if the knee-joint was becoming involved, but the swelling would gradually decrease,—only, however, to appear again in a few days at some other point near. Two of the wounds still discharged thin pus.

At the present date (June 1867), one year after I first saw the patient, the parts remain in much the same state. There is still swelling and chronic inflammation of the soft parts at the lower portion of the thigh, and one or two openings continue to discharge unhealthy pus. His general health remains wonderfully good, and he is able to go about a little. The knee-joint remains sound.

Remarks.—The case just related was certainly not one of simple suppuration of muscle, and I can only explain its nature and progress by considering it an example of circumscribed tubercular deposit undergoing softening, and gradually involving the more superficial soft parts.

In the writings of pathologists, so little reference is made to the deposit of tubercle in voluntary muscle, that I should have had some hesitation in pronouncing the case to be one of this nature, had not the history of the patient and the local symptoms been so well marked.

ARTICLE III.—*Choreomania: An Historical Sketch, with some Account of an Epidemic observed in Madagascar.* By ANDREW DAVIDSON, F.R.C.P.E., etc., Physician to the Court of Madagascar.

AMONGST the epidemics of the Middle Ages, one of the most peculiar, and to the psychologist one of the most interesting, is the dancing mania which, for at least two centuries and a half, appeared at irregular intervals in various parts of Europe. It received different names in different countries. Throughout Western Europe it was called chorea, chorea Sancti Viti, choreademonomania, the devil's dance, or the dance of St John; while in Italy, in more modern times, it was known as tarantism. The same disease has been observed in Abyssinia about the beginning of the present century, where it was called tigretier.

It is not my design to give a full account of this malady in its various epidemics, but simply to sketch some of its leading historical features, for without some acquaintance with its history, the following narrative of what was observed in Madagascar, would be imperfectly understood. This disease, which we shall name Choreomania, was, as I have said, originally called chorea, or Saint Vitus's dance; but these terms are now inseparably, though inaptly, applied to another and perfectly distinct nervous affection. From this change in name, along with the disappearance of the original chorea from Europe, considerable confusion has arisen. Not a few authors have regarded the descriptions of choreomania by the older writers as applying to modern chorea, and as these are entirely inconsistent with our everyday experience of the latter disease, they have considered the accounts of the epidemics of choreomania during the Middle Ages as extravagant and untrustworthy. The short allusion which Mason Good has made to the original disease in his classic work[1] indicates that he had fallen into this error. In a similar way, that prince of modern physicians, Joseph Frank, proceeding upon the assumption that choreomania is identical with chorea, says,—"Those who pretend that in 1374 chorea became epidemic, evidently confound it with the cereal malady (*ergotism*). In truth, however, chorea does not exhibit itself generally in an epidemic form, but, with some exceptions, is always sporadic."[2] Now, it is perhaps possible that one of the forms of ergotism may be liable to be mistaken for the chorea of modern nosologists; it could not have been confounded with choreomania, with which it has nothing in common. It is sufficient, however, to say that no one maintains that the disease referred to by Joseph Frank was epidemic in 1374. In one of the most recent, and undoubtedly one of our best text-books on medicine by Dr Aitken,[1] the same confusion occurs. Thus, treating of chorea, he writes as follows:—"In Germany, it was said for two centuries to have been epidemic, and the patients, probably many of them maniacs, were wont to join in frantic dances; and as late as 1673, they went in procession to the church of some favourite saint, of whom St John, St Guy, and St Vitus were the most reputed."[2] Now, the chorea of modern nosologists was never said to have been epidemic; that which was epidemic was clearly a different disease altogether.

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[1] Dr Good's Study of Medicine. 4th edition. Vol. iii. p. 33.

[2] *Vide* Practice of Medicine. By Joseph Frank. Art. Chorea.

Sir Thomas Watson[3] has appended to his lecture on chorea a short statement regarding the original disease, which proves that he recognises its true character. "The name," he justly remarks, "was applied, and much more suitably, to another set of symptoms of a most singular kind, concerning the real occurrence of which we might well be sceptical if we had not the authentic narratives of many instances of such disorder from different persons of credit, as well in this country as in others. . . . . . An affection characterized by movements which cannot be called spasmodic, but are rather owing to the irresistible propensity to muscular action, increased sometimes to a sort of mania by the force of imitation, or by the sound of music. It is the volition in this case that is morbid or perverse."[4] To increase the confusion, some authors have classed with choreomania many anomalous forms of nervous manifestation, some of which are evidently the result of organic disease of the nervous centres. Such are the cases recorded by Sagar and others, of patients who could only go forwards or backwards, or these singular diseases described as rotatio and malleatio.

Choreomania is undoubtedly distinct from spasmodic chorea on the one hand, and from these singular forms of perverted motion on the other. The various epidemics have been admirably described by Hecker, to whose work[5] those desirous of information may refer, and in which the curious will find references to and quotations from the original authorities on this subject. Some very interesting information is also to be found in Hæser's History of Epidemic Diseases.[6]

Choreomania may be defined as a psycho-physical disease, in which the will, intellectual faculties, and moral feelings are all more or less perverted, with an irresistible impulse to motion, and an insane love of music, often sporadic, but with a tendency in certain circumstances to become epidemic.

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[1] The Science and Practice of Medicine. By William Aitken, M.D. New ed. Vol. ii. pp. 337 and 338.

[2] It is a popular mistake to suppose that the patients suffering from this disorder resorted to the shrine of St John, as they did to that of St Vitus, for relief; the origin of the title, *dance of St John*, requires a perfectly different explanation.

[3] Lectures on the Principles and Practice of Physic. By Thomas Watson, M.D. 4th ed. Vol. i. p. 579.

[4] Paracelsus conceived that in the dancing mania the volition was temporarily suspended, not prevented.

[5] The Epidemics of the Middle Ages. From the German of J. F. C. Hecker. 3d ed. Lond. Pp. 80 to 167.

[6] Geschichte der Epidemischen Krankheiten. Von Dr H. Hæser. 8vo, Jena, 1865.

The first appearance of the dancing mania on record, occurred at Kolbig, in the year 1021. Unfortunately, we cannot rely upon the accuracy of the accounts of it that have come down to us, as they are undoubtedly mixed up with the fabulous. The simple fact that such an event occurred can alone be accepted as historical; beyond this there is no certainty. The tradition is, that a dozen of country people having been seized with this disease during the time of divine service, the priest, Ruprecht, cursed them to dance and howl for twelve months for having interrupted the worship, and that this curse was only removed by the prayers and intercession of two bishops, that four of the twelve died, and the remaining eight continued to suffer from tremblings of the limbs during the rest of their lives. Then, again, in the year 1278, two hundred persons were seized with it at Utrecht, and while dancing on the Mosel Bridge, the structure gave way, and many of them perished.

But perhaps the first remarkable outbreak occurred in the year 1374, under the name of St John's dance, because it began on St John's day, which was observed in the earlier centuries in the most outrageous manner, with mirth, debauchery, and dancing. It seems to be this epidemic which is referred to by Frank, and, strangely enough, supposed by him to have been owing to ergotism. "At Aix la Chapelle," says Hecker, "assemblages of men and women were seen who had come out of Germany, and who were united by one common delusion. They formed circles hand in hand, and, appearing to have lost all control over their senses, continued to dance, regardless of the bystanders, for hours together in wild delirium, until at length they fell to the ground in a state of exhaustion. They then complained of extreme oppression, and groaned as if in the agonies of death until they were swathed in cloths bound tightly round their waists, upon which they again recovered." The swathing, which was rendered more effective by the aid of a turn-stick, was resorted to on account of tympany. While dancing they were said to have been insensible to external impressions, but haunted by religious visions and caprices of various kinds. The attacks often commenced with convulsions, difficulty of breathing, and mental depression. Beaked shoes very much excited the resentment of the dancers. In Liege, the manufacture of these fashionable articles was forbidden by law. Red colours seem to have been even more offensive, the influence of which, Hecker suggests, might lead us to imagine an extraordinary accordance between this spasmodic malady and the condition of infuriated animals: the fact, however, that in other epidemics the affected were enraptured with red colours, goes against this ingenious supposition. We shall have occasion again to notice this point, when treating of the disease as observed in Madagascar. "After the patients had recovered by means of exorcisms, they related that during the attack they felt as if standing in a stream of blood."[1] This epidemic spread rapidly throughout Germany, Belgium, and the neighbouring countries—hundreds of all ages and both sexes being led away by the sympathetic contagion, and this outbreak only finally ceased after a period of four years.

Exorcisms were resorted to by the priests when pater nosters and simpler means failed; but we are assured that kicks and blows heartily administered by the bystanders often afforded still greater relief, and were generally used as adjuvants to other means, and, strange enough, even gladly borne by the sufferers. The common people ascribed this calamity to the immorality of the priests, "Vulgus autem apud Leodium dicebat, quod hujusmodi plaga populo contigisset eo quod populus male baptizatus erat, maxime a Presbyteribus suas tenentibus concubinas."

In the following century the dancing mania reappeared at Strasburg, as St Vitus's dance, and continued, more or less, for a century and a-half. The follies and vices of the previous epidemics were repeated. The patients resorted to the shrine of St Vitus in crowds, where they were cured—hence the name. The disease was common over northern Germany, France, and Belgium. It had a liking to the Rhine Valley; few of the cities in this district escaped this strange plague. The reason of this geographical predilection does not appear. In this new outbreak both sexes were affected, but women principally, and the upper classes and clergy were almost exempt. As may easily be supposed, profligacy and imposture became associated with these epidemics. Doubtless Paracelsus had too good reasons for naming it "the lascivious dance." The civil power in some places had to interfere for the suppression of these public exhibitions; but in others the magistrates employed relays of musicians and dancers for the relief of the affected. We need not be surprised that the loose and abandoned should feign a disease which gave them such an amount of license; but many were said to have acted in earnest the part they had assumed from design. Indeed, so real was the disease, and so great the frenzy of some of these poor, deluded mortals that they actually "dashed their brains out by running against walls and corners of buildings, or rushed headlong into rapid rivers where they found a watery grave."

While the morbid impulse lasted the physical endurance was truly extraordinary. This point has been insisted upon by every writer. Thus many hundreds continued dancing for days and nights in the public places of Strasburg without tasting food. From what I have myself witnessed, I can well enough believe the account by Felix Plater, of a case which certainly to many would seem almost incredible. Without giving his words, his story is, that he remembered a girl who had the dancing mania, and who exhausted several powerful men, commissioned by the authorities to dance with her. They relieved each other by turns, and this continued above four weeks, when she fell down exhausted, and was carried to an hospital where she recovered. She had remained in her clothes all the time, entirely regardless of her lacerated feet. She merely sat down occasionally to take some nourishment, during which the hopping movement continued.

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[1] *Vide* Hæser, op. cit.

The disease known as tarantism, and which was once common in Italy, was undoubtedly choreomania. The writings of Ferdinando, Baglivi, and others contain very full descriptions of it. While we may reasonably doubt the traditional etiology of the affection, we must accept the evidence of so many trustworthy and competent observers regarding the symptoms of which they were eye-witnesses.

The tarantula or aranea tarantula of Linnæus, which many regard as the phalangium of the Greek and Roman writers, is the name given to a spider, common not only in Apulia but in various parts of Europe and Asia. The effects of the bite of the tarantula have never been very satisfactorily made out. The subject is an interesting and curious one, upon which much has been written. A strong argument against the notion that choreomania was so caused is this, that whereas the spider has very probably existed in Italy for ages, choreomania only appeared there in the fourteenth or fifteenth century. Besides, the phalangia were known and carefully described by many ancient naturalists and physicians, but none of these ascribe to their bite the power of producing this strange disorder. Paulus Ægineta,[1] treating of the bites of these spiders, mentions as *local* symptoms, redness, coldness, and itchiness of the part, and, *constitutionally*, grousing, trembling, pain in the stomach, vomiting, erections of the penis, dysuria, and cold perspirations,—all probable enough results, and quite in accordance with what we know of the action of animal poisons.

The premonitory symptoms of tarantism were melancholy and lassitude, sometimes sleeplessness, with excitement, and occasionally tremors and vomiting. These symptoms often appeared in those bitten by the tarantula, when predisposed to the malady; not that the bite actually produced the disease, but in a nervous, excitable person, fully convinced that the poison produced such symptoms, and brooding over a bite real or imaginary, we can easily understand how the terror itself should induce this psychological condition. We must remember that the most ridiculous opinions prevailed even among scientific men on this subject. Almost every species and variety of spider, not only in Italy, but everywhere, was considered poisonous. Scaliger affirms that so virulent were some of the spiders found in Gascony, that "if trodden upon, so as to be crushed, their poison would penetrate through the very soles of the shoes." No wonder then if a nervous girl who believed herself even to have been in contact with this loathed insect, should become affected with what she understood to be the inevitable consequences of the poison. Again, when these symptoms made their appearance, the patient, influenced by the universal delusion, readily fancied that they must have been bitten.

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[1] Paulus Ægineta, vol. ii., 8vo, p. 169. Syd. Soc. Ed., Lond.

From the premonitory melancholy, patients were aroused by the sound of music; and a great variety of instruments was in use. Baglivi[1] enumerates among the instruments employed to cure tarantism, the drum, timbrel, shepherd's pipe, lyre, and cymbal, along with fiddles and flutes of various kinds. If we can credit that celebrated author, and in this particular we cannot doubt his statement, some patients were quite unaffected by certain of these musical instruments, yet immediately responded to another, and forthwith began to dance. In fact, there seems to have been a wonderful amount of caprice in this respect; but human credulity cannot believe that this dislike of certain instruments and partiality for others, was, as Baglivi asserts, dependent upon the size, colour, or virus of the spider which had inflicted the wound.

Whatever differences there may have been in regard to the instrument, all agreed in their love of quick and lively music, and even the least musical seem, while under this disease, to have become so wonderfully acute and just in their perception of harmony, that a false note was unendurable.

Bands of music traversed the country to cure the malady, and no doubt often caused, or at least encouraged it. The dancing generally continued from ten to fourteen hours daily, and from three to six successive days, and this amount of exertion we are told gave rise to no apparent fatigue. As in St Vitus's dance, so in tarantism the mania showed a tendency to recur annually, and was cured every year by resorting to the means we have described. Whether a foregone belief that the disease was not to be eradicated, but must necessarily return, by preying upon the mind produced this result, or whether, as is probable, some other cause operated in this way, it is impossible to say.

The ordinary termination of the disease seems to have been in recovery, and, as we said, its duration was comparatively limited. The other phenomena of the disease were not so uniform. Some, in their infatuation, cast themselves into the sea or into rivers, courting destruction, others were buried up to the neck in earth to obtain relief. Many afflicted by melancholy frequented the tombs, while others, labouring under sexual excitement, abandoned themselves to their passions. Baglivi says that, "maids and women, otherwise chaste enough, without any regard to modesty, fall a sighing, howling, and into very indecent motions . . . they love to be tossed to and again in the air and the like. . . . Others you cannot please, unless they be soundly drubbed on the breech, heels, feet, and back." Unlike the St John's dancers in Germany, those affected by tarantism generally liked red colours; green seems also to have been much admired. It is unnecessary to enter into a minute description of the tigretier, or dancing mania of Abyssinia. The account of it in Hecker's work, to which we have referred, or the original by Pearce,[1] is within the reach of those interested in the subject. A short summary is all that is necessary, as this will suffice to show its identity with the disease in Europe.

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[1] Baglivi, Dissertatio I.—De Anatome, morsu, et effectibus Tarantulæ. Lugduni in Batavis, 8vo, 1699, pp. 35, 38.

(*a*.) It was more or less epidemic, chiefly affecting women.

(*b*.) It began with symptoms of constitutional disorder, at first febrile, which sometimes gave place to a lingering marasmus, with an affection of speech, and was occasionally fatal.

(*c*.) It was characterized by an intense craving for music, and an impulse to dance, leap, or run, with an almost supernatural power of physical endurance while the mania lasted.

(*d*.) It was regarded by the natives as a demoniacal possession.

All these points are brought out in the simple, and upon the whole trustworthy, narrative of Nathaniel Pearce, who was himself an eyewitness of what he relates, and who had the misfortune of observing it in his own wife. One thing is very remarkable in his account of the tigretier, and in this respect it differs a little from what has been observed elsewhere, viz., the *very* marked constitutional disorder preceding and accompanying the disease, proving—what the history of medical psychology affords many examples of—that the most serious physical disease may be determined or caused by psychological influences.

What affinity the leaping ague in Scotland had to true choreomania, I shall not attempt to decide. The following account of it will illustrate its character:—

"Those affected complain of pain at the lower part of the back, to which succeed convulsion fits, or fits of dancing, at certain periods. During the paroxysms, they have all the appearance of madness, distorting their bodies in various ways, and leaping and springing in a surprising manner, whence the disease has acquired its vulgar name. Sometimes they ran with astonishing velocity, and often over dangerous passes, to some place out of doors which they have fixed on in their minds, or perhaps even mentioned to those in company with them,—then drop down exhausted. At other times, especially when confined to the house, they climb in the most singular manner. In cottages, for example, they leap from the floor to what are called the bauks, or the beams by which the rafters are joined together, springing from one to another with the agility of a cat, or whirling round one of them with a motion resembling the fly of a jack."[2]

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[1] Pearce's Abyssinia. Lond., 1831.

[2] Sinclair's Statistical Account of Scotland, quoted by Hecker.

Having thus referred to choreomania, as has been seen in various parts of Europe and in Abyssinia, I shall proceed to give a short account of this singular disease as observed by myself and others in Madagascar,—a disease so strange that I might well have hesitated to record the facts, if they had not been witnessed by so many whose character and judgment place their evidence beyond question.

In the month of February 1863, the Europeans resident at Antananarivo, the capital of Madagascar, began to hear rumours of a new disease, which it was said had appeared in the west or south-west. The name given to it by the natives was Imanenjana, and the dancers were called Ramanenjana, which probably comes from a root signifying to make tense. The name did not convey any idea of its nature, and the accounts given of it were so vague as to mystify rather than enlighten. After a time, however, it reached the capital, and in the month of March began to be common. At first, parties of twos or threes were to be seen, accompanied by musicians and other attendants, dancing in the public places; and in a few weeks these had increased to hundreds, so that one could not go out of doors without meeting bands of these dancers. It spread rapidly, as by a sort of infection, even to the most remote villages in the central province or *Imerina*, so that, having occasion to visit a distant part of the country in company with an Englishman, we found even in remote hamlets, and, more wonderful still, near solitary cottages, the sound of music, indicating that the mania had spread even there.[1]

The public mind was in a state of excitement at that time, on account of the remarkable political and social changes introduced by the late King Radama II. It is unnecessary here to explain the nature of these changes, or the way in which they moved the people generally, and roused the superstitious feelings of the lower classes. A pretty strong anti-Christian, anti-European party had arisen, who were opposed to progress and change. This strange epidemic got into sympathy, especially in the capital, with this party, and the native Christians had no difficulty in recognising it as a true demoniacal possession. There was universal consternation at the spread of this remarkable disease, and the consternation favoured its propagation.

Those affected belonged chiefly, but not by any means exclusively, to the lower classes. The great majority were young women between fourteen and twenty-five years of age; there were, however, a considerable number of men to be seen amongst the dancers; but they certainly did not exceed one-fourth of the entire number, and these also belonged mostly to the lower orders of society.

Very few, indeed scarcely any, Christians came under this influence, no doubt partly because the general spirit of dissatisfaction and superstitious unrest did not affect them directly. Their sympathies were rather *with* those changes, political and social, which disturbed the masses. They were, so to speak, beyond the reach of the current. Their exemption may be partly explained by their superior education, mental and moral, but was also very manifestly owing to their firm conviction that the whole affair was a demoniacal possession of their heathen countrymen which could not affect them as Christians. They could thus look at it as outsiders, with the interest of observers, without the fear which, in such a malady, is one of the means of its propagation.

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[1] The rapidity was certainly remarkable, but not to be compared with what is related of the outbreak of the child-pilgrimage of Erfurt, when, on 15th of July 1237, one thousand children assembled, as if by instinctive impulse, without preconcertion, and unknown to their parents.

The patients usually complained of a weight or pain in the praecordia, and great uneasiness, sometimes a stiffness about the nape of the neck. Others, in addition, had pains in the back and limbs, and in most cases there seems to have been an excited state of the circulation, and occasionally even mild febrile symptoms. One or more of these premonitory symptoms were frequently observed; there were numerous cases where they were absent. After complaining, it may be one, two, or three days, they became restless and nervous, and if excited in any way, more especially if they happened to hear the sound of music or singing, they got perfectly uncontrollable, and, bursting away from all restraint, escaped from their pursuers, and joined the music, when they danced sometimes for hours on end with amazing rapidity. They moved the head from side to side with a monotonous motion, and the hands, in the same way, alternately up and down. The dancers never joined in the singing, but uttered frequently a deep sighing sound. The eyes were wild, and the whole countenance assumed an indescribable, abstracted expression, as if their attention was completely taken off what was going on around them. The dancing was regulated very much by the music, which was always the quickest possible—it never seemed to be quick enough. It often became more of a leaping than a dancing. They thus danced to the astonishment of all, as if possessed by some evil spirit, and, with almost superhuman endurance, exhausting the patience of the musicians, who often relieved each other by turns, then fell down suddenly, as if dead; or, as often happened, if the music was interrupted, they would suddenly rush off as if seized by some new impulse, and continue running, until they fell down almost, or entirely, insensible. After being completely exhausted in this way, the patients were taken home, the morbid impulse apparently in many cases destroyed. Sometimes the disease, thus stopped, never recurred; but more frequently there was a return. The sight of dancers, or the sound of music, even in the distance, or anything which, by association, seemed connected with the disease, determined a recurrence of the fit.

The patients were fond of carrying about with them sugar-canes. They held them in their hands, or carried them over the shoulder while they danced. Frequently, too, they might be seen going through their singular evolutions with a bottle of water upon their heads, which they succeeded wonderfully in balancing. The drum was the favourite instrument, but others were used, and all were acceptable. When there was no musical instrument to be had, the attendants beat time with their hands, or sung a tune which was a favourite amongst the Ramanenjana. There is a sacred stone in a plain below the city, where many of the kings of Madagascar have been crowned. It is a large, rather irregular, stone, partly built, so as to round it off, and is about eight feet high, and twelve feet in diameter. This stone was a favourite rendezvous for them. They danced here for hours on end, and concluded by placing the sugar-cane, as a sort of offering, upon the stone.

The tombs were also favourite places of resort for these dancers. They met in the evenings and danced by moonlight for half the night, or longer, amongst the graves.

Many of them professed to have intercourse with the departed, and more particularly with the late queen. In describing their sensations afterwards, some said that they felt as if a dead body was tied to them, so that with all their efforts they could not shake themselves clear of it; others thought that there was a heavy weight continually dragging them downwards or backwards. They disliked, above all things, hats and pigs.[1] The very sight of these objects was so offensive that, in some cases, it threw them into a kind of convulsion; but more frequently excited their rage. Still more inexplicable was their dislike of every article of dress of a black colour. Swine are reckoned unclean by several tribes in Madagascar, and might thus be an object of superstitious horror. Hats, as associated with foreigners, might similarly be objected to; but what is there in a colour to excite antipathy? Yet this caprice has been so common in this disease, in all its recorded epidemics, as to deserve attention. This phenomenon was likewise observed in the child-pilgrimages of the thirteenth century, which, towards the end, began to assume some of the characteristics of choreomania. Feuchtersleben, speaking of the sense of sight, says,—"The several colours have a decided, not fully defined, but individually modified, psychical effect. In general, the positive colours, red, yellow, etc., excite the mind—the negative, blue, etc., calm it." If it be difficult to ascertain the psychical effect of colours in health, how much more so in disease. The sense of sight is probably not more depraved than the other faculties and senses. In Abyssinia we have seen that the faculty of speech was disordered. The most intellectual of all the senses, that of hearing, is always affected to a remarkable degree, as evidenced not only by the morbid desire for music, but by the illusions and delusions connected with this special sense. All this points to a morbid condition, not only of the motor centres, but of the most important ganglia at the base of the brain, —a morbid condition chiefly functional in character, and produced by psychical causes.

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[1] On this subject, see Ellis's Madagascar Revisited, 8vo. Murray, Lond. 1867.

The disease was associated with national prejudices, religious and political. Did these originate it? I think not. They simply afforded, as it were, the condition, or one of the conditions of its epidemic manifestation. They formed the bond of sympathetic union among the affected. To become epidemic, this disease must seize some popular idea or superstition, at once so *firmly* believed as to lay hold of the heart of the people, and so *generally* as to afford scope for the operation of pathological sympathy. Thus, choreomania was associated with the religious superstitions of the Middle Ages. Manifestly hostile to the priests,—so deep was the hold which the church exercised over even its *dissatisfied* children, that exorcisms, as we have seen, became one of the most potent means of cure. In Madagascar, in the same way, those who know the respect of the natives for their ancestors, and their unbounded reverence for their resting-places, might *à priori* have decided the form which such a mania would assume in that country. It must further be remembered that choreomania never appears as an epidemic, except when the public mind is deeply agitated by some general cause. In illustration of this, it will be remembered, as Hecker and others have pointed out, that choreomania, in its first outbreak, followed closely upon the black-death, "and was to be ascribed to the excitement of men's minds, and the consequence of wretchedness and want." The mental and moral state of the people, induced by such great calamities as the black-death and the inundations of the Rhine, and by the political and religious conditions of the period—the feuds of the barons—the corruption of the church and of public morals, the licentious exercise of power, or the unwarranted resistance of authority, were all exciting causes of its epidemic manifestation.

The disease was rarely fatal; still a few cases of death undoubtedly happened, and these only occurred, so far as I am aware, where the patient was restrained from joining in the dances. It would seem that *these* actually died from pent-up passion or excitement. The dancing, no doubt, was so far salutary. The music served to regulate and control the wild muscular movements that might otherwise have proved injurious. A most remarkable fact is, that the mere physical exercise, prodigious and long-continued as it is in this disease, seems perfectly harmless. I never heard of its having proved fatal, nor even to have produced abortion in pregnant women, — a circumstance observed by Burton[1] in his account of the earlier epidemics, and enforced with more than his usual pith and quaintness.

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[1] Burton's Anatomy of Melancholy, p. 80. Lond., Tegg, 1863. Robert Burton was born at Lindley, Leicestershire, 8th July 1576.

The question of the reality of these phenomena requires a few words, although what has been said above in regard to the disease in Germany applies equally to Madagascar. No one who saw it can doubt that it was perfectly real as a psychopathy, and no one of candour or discrimination will deny that a certain amount of imposture *was* practised. It was more difficult, however, than one might suppose to feign this disease and act it out consistently. The look, manner, movements, and power of enduring physical exertion, were sufficient to distinguish the simulated from the real. It is remarkable, and should never be lost sight of, how often the most contradictory and opposite feelings and motives seem to be mixed up in such cases. It can easily be understood how many of these Ramanenjana may have become the victims of a strong morbid impulse, which they at first either feigned or fostered.

How wonderful is the history of human delusion, and how nearly the strongest delusions in some of their aspects border on imposture! Witness the burning for witchcraft in Scotland: never was there any want of witches to burn while the demand for them continued. Poor infatuated women and men were found to confess to the most impossible of crimes, with certain death staring them in the face, so long as the public superstition demanded such victims. A sad record of human folly—darker than anything else I know of—is to be found in some of the volumes of the Wodrow Society's publications.

It must never be forgotten by the physician how strangely interwoven is the spiritual and the physical in man. Especially is it to be remarked how physical diseases resulting from psychical causes will often be cured by strong mental impressions. Hysteria has thus been often cured. Boerhaave cured epilepsy in children by a threat: the suicidal monomania of the Milesian girls was overcome by the fear of their bodies being exposed after death. In the same way, in Madagascar, the fear of punishment alone, or combined with moral discipline, prevented the mania in many families, when such means were adopted by my advice. Legal enactments almost extinguished it for a time, by confining the affected to their own houses, and preventing the public performance of music.

Since this first, and most remarkable outbreak, the disease has occurred annually every spring. We find in the "Post" the following account of the slighter epidemic of 1864, evidently written by a European resident in the island:—

"The Queen has been greatly alarmed at an epidemic of the Ramanenjana, which has raged over the capital. This disease is a sacred malady, of an extraordinary character, and of which the doctors understand nothing (too true!). The patient is seized with convulsions, raises savage cries, and rolls on the ground in the streets. The population is almost entirely soon stricken with the same malady, and great processions of people pass along the streets, creating disorder, and such movements are often taken advantage of to upset a throne or overturn a ministry. The unfortunate Radama was a victim of the Ramanenjana of 1863."

Although this account is exaggerated, and the facts not detailed with any accuracy or elegance, it tends to illustrate the impression caused by even a mild epidemic of choreomania in those who for the first time witness it. From inquiries that I have made, I find that a similar disease has existed in Madagascar for at least fifty years, and is called "Ambo." It seems in no respect different from choreomania, except that it is sporadic.

From a careful consideration of these facts, we may safely deduce the following propositions:—

(*a*) Choreomania is a distinct psycho-physical disease, with its leading features clearly marked and uniform,—to be distinguished from modern chorea and from organic nervous disease.

(*b*) There is always as an ESSENTIAL part of it an uncontrollable impulse to dance, and a morbid love of music; very generally also, peculiar caprices regarding certain colours and objects, the power of speech being occasionally affected, and moral mania common.

(*c*) The subjects of this disease are those most liable to hysterical diseases, viz., young women about the age of puberty, and men of an excitable temperament.

(*d*) Although it may be sporadic, it shows a tendency to become epidemic during periods of general excitement.

(*e*) In its epidemic form it is usually associated with some prevalent deep-rooted belief or superstition.

(*f*) It spreads by what we may call pathological sympathy.

(*g*) When epidemic, it is generally preceded by premonitory symptoms referable to the nervous system, and secondarily induces physical derangement, and sometimes even death.

It would be foreign to the design of this paper to enter into any of the interesting psychological questions which suggest themselves in connexion with this subject; such as, the nature of the changes on the nervous centres, the primary cause of such changes, and the organic lesions resulting therefrom; inquiries such as these must be of deep interest to the physician, the philosopher, and the divine. But this disease is of special practical interest to the magistrate and medical jurist. In Madagascar, this mania, in no small degree, tended to bring about the rebellion, which ended in the death of the sovereign and his ministers, and determined a revolution political and social in that vast island. Such an epidemic may occur again in India or other countries where British interests may be deeply involved; and in such cases it is important that the physician should know the disease, and be able to direct the authorities to a proper view of its nature and cure.

ARTICLE IV.—*On the Treatment now used against the Hydatid Disease in Iceland.* By J. HJALTELIN, M.D., Inspecting Medical Officer of Iceland.

THE hydatidic disease of the liver was in former days in Iceland looked upon as a sort of chronic enlargement of that organ, and was therefore called *liver infarct* (infarctus hepatis), and supposed to be produced by a stoppage in the hepatic vascular system. At that time the disease was treated by resolvent and laxative medicines, which were expected to relieve or resolve the intumescence of this organ. The medicaments then most used were rhubarb, cicorium, soap, and some preparations of mercury, especially calomel internally and mercurial ointment externally. But although this treatment was in most cases only palliative, cases are on record where the mercurial treatment really seemed to have removed the hydatidic disease. Some of those cases were described in a Danish medical newspaper, called the "Bibliothek für Lager," of 1831-32, and also, as far as I can remember, in Huffeland's Journal; they were also noticed by some medical travellers in Iceland; and in the year 1839, I saw two cases cured in this way by the late chief-physician of Iceland, Thorsteinson; one of those patients still lives near Reikjavyk, and was, when I last saw him, perfectly healthy.

This treatment has of late been recommended by the renowned pathologist, Hermann Lebert, at Breslau, and this he did in a learned congress of medical men in Switzerland about three years since. He proposed to use calomel internally with kousso, but whether his propositions have been carried out in Germany or not, I have been unable to ascertain.

When the modern pathologists had discovered that the hydatidic disease of the liver consisted in a parasitic growth of certain species of tænia, little credit was given to internal medicine in this disease, as it was thought impossible that such physic could reach the parasite in his hidden abode in the liver. The innermost membrane of the parasitic hydatid tumour seems to be without vessels, and it was therefore thought impossible that any medicine could be absorbed into it. In reasoning thus, it seems to me that the organic imbibition has not been taken into due account; for it seems quite evident that the parasite of the hydatidic tumours, be it in the liver or in any other internal organ, can but be nourished by the fluids of the body, and therefore only through the vascular system. But accepting this to be a true and undeniable physiological fact, the consequence must of course be, that whatever sort of physic comes into the blood, so that this fluid itself is duly impregnated with it, this stuff must reach the parasite although quite invested by a non-vascular membrane, but which, nevertheless, permits imbibition. Taking this as granted, I proposed, in the year 1863, to destroy the echinococci of the human body, and especially those of the liver, by the tincture of kamala. My proposal I sent to the Royal Sanitary

College at Copenhagen, and this was a little before, or just at the same time, when Professor Hermann Lebert had made his proposal regarding the aforesaid treatment of this disease by calomel and kousso.

My proposal was built upon the following arguments :—

1. Because kamala is at this time looked upon as the most trustworthy remedy against "tapeworm" in man and animals, and it can only be so by reason of its strongly poisonous effect on those parasites.

2. There can, according to my views, be no difficulty in getting the tincture of kamala into the current of the portal vein, for if we remember that all alcoholic liquors are in the stomach absorbed by the portal veins of this organ, they must quickly and directly be thrown into the liver.

3. The first trial to make was to ascertain whether the tincture of kamala could be mixed with water without being precipitated or decomposed, or not, and having, by some experiments, ascertained that this was not the case, I thought it fully warranted to give it a fair trial.

The Royal Medical College at Copenhagen had nothing to say against my views and proposals, and I consequently hastened to execute them. The first patient who used this remedy was a girl of sixteen years; she took thirty to forty drops of the kamala tincture three times a-day in a tablespoonful of water. The hydatidic tumour was in her situated in the right lobe of the liver, a little below, and at right of, the ensiform cartilage; it was of the size of a large egg, and gave by percussion a most clear sound or feeling of the "frémissement hydatidaire." The patient was affected by "icterus," with eructations, dyspepsia, intestinal catarrh, and constipation, and was therefore very weak. After having used the kamala tincture for ten days, my little patient found herself much better; the icterus was gone, and the tumour far less tense than it had been when she had begun to take the tincture. In about six weeks the tumour was quite gone, and she has ever since been in excellent health. The second trial was now made in an adult servant-maid, who, for more than three years, had been complaining of a large hydatid tumour in the left lobe of the liver, with dyspeptic symptoms. After the lapse of one month, this patient was radically cured, and has since that time, or for nearly two years, been quite relieved of her former complaint. No less than about twenty other patients have, during the last two years, been treated with the same favourable result.

Having thus established the curative effect of tincture of kamala, I asked all my medical brethren in Iceland to give this remedy a fair trial. Two of them, who were the most experienced, now began to use it extensively, and they have in the last two years given me very satisfactory reports of their hydatidic cases treated in the aforesaid manner.

But, notwithstanding these favourable results, there are many cases of the Icelandic hydatidic disease where this remedy will not be able to effect a cure. This is especially the case in long-standing hydatidic tumours where matter has been formed in the interior of the cyst itself, and then nothing remains but a judicious operation. The opening of the hydatidic sac has of late in Iceland been performed in different manners; the oldest and most common method of opening it is that with the troisquart, but this has seldom been done except when the sac had reached that enormous volume to fill up the whole abdominal cavity, so that punctures could be made either below the umbilicus, or in the sides, between the umbilicus and the anterior spine of the ileum.

I know a very able surgeon, Dr Thorarensen, who has performed this operation about forty times, and, indeed, with very good success, having on the whole not lost more than six or seven patients. I have often performed this operation myself, both in the aforesaid places and in different other parts of the abdomen, sometimes with a capillary troisquart, sometimes with an ordinary troisquart, and sometimes with the bistoury. Out of thirty-six cases thus operated on, I have lost six. The operation has been most successful if undertaken early, and with the capillary troisquart plunged into the most prominent part of the cyst itself. It is, moreover, remarkable that out of six cases which have been opened with the bistoury, all have been radically cured, and I have observed that the following "peritonitis" has been far less extensive and dangerous than when the operation was performed with an ordinary troisquart.

The method of Recamier, of opening the hydatidic cyst by caustics, has of late been performed in Iceland by one medical man, Finsen, and, according to his own description, with favourable success. Not a single one of our medical brethren in this island, except myself, has thought it advisable to follow this method, and, to tell the truth, I myself had little occasion to admire it. I found also some cases operated upon by Dr Finsen, which turned out very much to the disadvantage of this operation. In three cases which I saw, he had completely failed to open the sac, and they were all nearly lost under the symptoms of most diffuse "peritonitis." I have tried this method in five cases, and had in them all to deal with extensive "peritonitis." One of those patients died, and it was, from the autopsy, evident that the supervening acute peritonitis was occasioned by the caustic employed; and I think really that it will be found of little difference whether we apply the caustic potass or the caustic of Vienna, as Finsen did, for in both cases a dangerous inflammation of the whole peritoneal coat may be expected.

There are in Iceland many cases (I should think about one-third of all hydatid cases) where the hydatidic tumour is situated at the lower border of the liver, about the capsule of Glisson. Such cases are in the beginning extremely bad to diagnose; the most common symptom in the beginning being icterus, but which also may depend on other pathological changes either in the liver itself or in the stomach and intestines, as gastric catarrh, gallstones, or enteroliths, which are of no rare occurrence in Iceland. In those cases there cannot any operation be thought of for the relief of the sick, and the patients are invariably lost, unless the cyst, which often may reach an enormous size, should burst into the abdominal cavity, from whence it may be drawn out by the abdominal paracentesis. Many cases of this sort have come under my treatment, but most of them have terminated fatally. In these cases I look upon the kamala tincture as the only reliable remedy, but it ought to be given before matter is deposited in the interior of the cyst, or as soon as possible, and it will, I think, hardly fail to cure the disease.

ARTICLE V.—*Typhus Statistics of the Dundee Royal Infirmary, with Remarks.* By T. J. MACLAGAN, M.D., late Superintendent, Dundee Royal Infirmary.

THAT overcrowding is the strongest predisposing cause of typhus is generally admitted; with it is usually combined a considerable amount of privation and destitution, due either to famine consequent on failure of the crops, or to the same condition artificially induced by strikes and commercial distress.

The epidemic which has furnished the great part of the following statistics is an instance of the connexion existing between typhus and overcrowding, caused, not by famine and destitution, but by exactly the opposite conditions.

The trade of Dundee has for some years back been in a state of unexampled prosperity; labour has been abundant, wages good, and the general state of the community prosperous and comfortable. In consequence of this, great numbers of the inhabitants of the towns and villages of Forfarshire and the neighbouring counties have moved into Dundee, and have found there the work and wages desired. The house accommodation has, however, been quite inadequate for them, and the consequence has been a state of overcrowding, resulting in an epidemic of typhus, which, during the years 1865 and 1866, sent into the Dundee Infirmary 1600 cases of that disease. Had destitution co-existed with this state of overcrowding, the malady would doubtless have been more widespread and fatal; as it is, its occurrence at such a time of prosperity tends to show that overcrowding, however caused, strongly predisposes to typhus, and that for the production of this disease it is not necessary that it should be linked with destitution.

On many occasions, when visiting the typhus haunts, have I found a family composed of father, mother, and several children of all ages, occupying the one room which formed their entire accommodation; and this, not because of poverty, but because they could get no more suitable place of abode. One instance I remember well, of a respectable mechanic, with a wife and four daughters of ages varying from four up to eighteen, who occupied only one room. The father was making good wages, two of the daughters were working in the mills, and a son (a boy of sixteen) was obliged to live in lodgings away from his parents. The man told me that he had come to town two years previously, and had taken the room in which they then lived only for a short time, until he could find a suitable house, but that he had not yet succeeded in getting one. Typhus attacked one of the children, whom the mother nursed at home, refusing to send it to the hospital. Within a short time afterwards all the members of the family, except the son, were admitted into the Infirmary, suffering from typhus fever. Many very similar cases came under my observation during the course of the epidemic.[1]

A careful examination of the records of the Dundee Infirmary shows that during the last nine years there were treated in that institution 2492 cases of typhus fever.

The following table shows the ages in quinquennial periods, with the mortality in each :—

TABLE I.

AGE.	Total.	Recovered.		Died.		Percentage of Deaths in Males.	Percentage of Deaths in Females.	General Percentage.
		M.	F.	M.	F.			
Under 5 .	78	37	39	1	1	2·63	2·5	2·56
5 to 10 .	270	124	138	4	4	3·12	2·81	2·96
10 „ 15 .	430	197	222	5	6	2·47	2·63	2·56
15 „ 20 .	440	178	245	6	11	3·26	4·29	3·86
20 „ 25 .	332	139	168	9	16	6·08	8·69	7·53
25 „ 30 .	257	96	131	17	13	15·04	9·02	11·67
30 „ 35 .	172	61	84	11	16	15·27	16	15·69
35 „ 40 .	157	51	73	21	12	29·16	14·11	21·01
40 „ 45 .	151	57	57	22	15	27·84	20·83	24·5
45 „ 50 .	81	25	29	19	8	43·18	21·62	33·3
50 „ 55 .	55	16	13	17	9	51·51	40·9	47·27
55 „ 60 .	20	6	7	4	3	40	30	35
60 „ 65 .	26	1	10	9	6	90	37·5	57·69
65 „ 70 .	7	...	1	3	3	100	75	85·71
Not noted,	16	4	6	2	4	33·3	40	37·5
	2492	992	1223	150	127	13·13	9·407	11·11

It will be seen from this, that of the total 2492 cases there died 277, being a mortality of . . . . . 11·11 per cent.

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[1] It is interesting to note the relation existing between the increase in the population and the prevalence of typhus. The towns in which the fever has been most prevalent within the last few years are Glasgow, Dundee, and Greenock. It will be seen from the following statement that in these three towns the increase in the population was also greatest :—

In Edin. and Leith, between 1851 and 1861 the population increased 5·5 per cent.
„ Aberdeen, „ „ „ „ „ 2·5 „
„ Perth, „ „ „ „ „ 5·9 „
„ Glasgow, „ „ „ „ „ 19·9 „
„ Dundee, „ „ „ „ „ 14·5 „
„ Greenock, „ „ „ „ „ 14·7 „

In all the large towns of Scotland typhus has existed, but only in the three last mentioned has it been widely epidemic.

Amongst males, the mortality was . . . 13·13 per cent.
,, females, the mortality was . . 9·4 ,,

This higher mortality amongst males has been generally noted by statisticians. The probable explanation seems to me to be that given by Dr Murchison, that men are more apt to be of intemperate habits, and are more liable to expend their muscular force during the early stages of the fever.[1]

The remarkable influence exercised by age over the rate of mortality is well seen in this table, and shows clearly what has so often been insisted on by writers on the subject, that no comparative statement of the results of the treatment of typhus in different localities is of value, unless the comparison be drawn between patients of the same age. Of the 2492 cases, nearly three-fourths are under 30 years of age.

The mortality was much higher during those years in which few cases occurred than during those in which the disease was epidemic. During the years 1858–62 there were treated 395 cases, being an average for each year of 79; amongst these occurred 61 deaths, being a mortality rate of 15·4 per cent. During the last four years, 1863–66, there were treated 2097 cases, being for each of these years an average of 524; amongst these there occurred 216 deaths, or a mortality of 10·3 per cent. This smaller mortality during an epidemic than in an ordinary season has not unfrequently been noted. Its probable explanation is, that during a year in which the disease is not epidemic a larger number of those attacked have previously been in bad health; their weakened state leading them to contract the disease under circumstances in which a healthy person would resist it.

The following table shows the monthly admissions for nine years:—

TABLE II.

MONTH.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	TOTAL.
January, .	...	1	19	5	5	11	19	41	150	251
February, .	...	1	18	7	0	13	22	29	66	156
March, . .	...	0	12	15	2	8	30	55	87	209
April, . .	1	5	1	16	6	15	21	50	89	204
May, . .	2	2	1	5	7	32	17	63	76	205
June, . .	3	6	3	19	3	19	19	40	55	167
July, . .	2	10	1	13	1	22	18	66	45	178
August, .	1	11	0	5	3	27	30	60	29	166
September,	1	13	1	14	6	24	30	71	35	195
October, .	3	13	5	16	7	30	16	116	28	234
November,	1	27	2	7	6	18	17	176	28	282
December,	3	39	4	7	8	17	25	124	18	245
	17	128	67	129	54	236	264	891	706	2492

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[1] Of the 2492 cases, 1142 were males, and 1350 females. The preponderance of females is accounted for by the fact that the majority of the millworkers belong to that sex; they preponderate in the town, and naturally do so in the hospital statistics too.

A reference to this will show that November holds priority, and that the winter months furnish a considerably larger number than those of any other season:—

February, March, and April,	furnished	during	nine years, .	569
May, June, and July,	,,	,,	,, .	550
August, September, and October,		,,	,, .	595
November, December, and January,		,,	,, .	778

The number of admissions during the three winter months being 228 in excess of the admissions during the three summer months.

The epidemic reached its height in November 1865, in which month 176 cases were admitted; in December there were 124 admissions; in January 1866 there were 150; in February only 66; from that date they continued, with occasional slight rises, to fall, until, in December 1866, there were only 18 cases admitted. This greater prevalence of the disease during the winter months, though frequently observed, is by no means invariable. In the absence of any special agent, such as famine or commercial distress, it might, however, be expected to show an increase during the cold season, as it is then that so much care is taken by the lower classes to keep out the fresh air by all possible means. There is thus produced in their dwellings an atmosphere admirably adapted for the propagation and spread of typhus, and one which could not be produced during warm weather when the doors and windows are kept open to admit the fresh air. A badly ventilated room containing two people may be really more overcrowded,—that is to say, afford less breathing space to each occupant,—than a well ventilated room of the same size having twice as many people in it.

Of 1750 cases of typhus treated between the beginning of 1864 and the end of 1866, and of which full and accurate notes were kept, 1557 were uncomplicated and 193 complicated. In no case has the secondary affection been raised to the dignity of a complication, unless its severity were such as to influence more or less the prognosis, course, or treatment of the case.

Of the 1750 cases, 809 were males and 941 females; amongst them there occurred 174 deaths—96 males and 78 females; being—

For males a death-rate of 1 in 8·42, or 11·86 per cent.;
,, females ,, ,, 1 in 12·06, or 8·28 ,,
and ,, all cases, ,, ,, 1 in 10·05, or 9·94 ,,

Excluding 10 cases fatal within 24, and 9 within 48 hours of admission, the general death-rate was 1 in 11·29, or 8·85 per cent. Of the 1557 uncomplicated cases, 750 were males and 807 females; of these 119 died—78 males and 41 females; being—

For males a death-rate of 1 in 9·6, or 10·4 per cent.;
,, females ,, ,, 1 in 19·6, or 5·08 ,,
and ,, all cases ,, ,, 1 in 13·08, or 7·6 ,,

Of the 193 complicated cases, 59 were males and 134 females; amongst them there occurred 49 deaths—16 males and 33 females; being a mortality rate—

For males, of 1 in 3·6, or 27·1 per cent.;
„ females, of 1 in 4·06, or 24·6 „
and „ all cases, of 1 in 3·9, or 25·38 „

Amongst the 1750 cases, 1 in 9·06, or 11·02 per cent. was complicated;
„ „ males, 1 in 13·71, or 7·28 „ „
„ „ females, 1 in 7·02, or 14·24 „ „

Excluding those cases in which the complicating malady was referable to the uterine organs, the ratio of complicated cases in females was 1 in 7·6, or 13·07 per cent. Excluding those cases in which the complicating malady existed prior to the febrile attack, complications occurred in 1 in 9·8, or in 11·7 per cent. of the whole.

In the following table is given a list of the complications, with the rate of mortality in each:—

TABLE III.—*Showing the Complicating Maladies, and the Mortality in each.*

Complicating Malady.	Total.	Recov.	Died.	Rate of Mortality.	
				Per cent.	Ratio in cases affected.
Abortion and miscarriage, .	7	7	...	...	...
Abscesses in various parts, .	1	1	...	...	...
Bronchitis, ...	88	66	22	25	1 in 4
Convulsions, . . .	8	4	4	50	1 „ 2
Diarrhœa, ...	12	11	1	8·3	1 „ 12
Diphtheria, ...	2	1	1	50	1 „ 2
Empyema, ...	2	1	1	50	1 „ 2
Epistaxis, ...	6	6	...	...	...
Erysipelas, ...	3	2	1	33·3	1 in 3
Gangrene of parts not subjected to pressure, . .	7	4	3	42·85	1 „ 2·3
Hæmoptysis (profuse), . .	1	...	1	100	1 „ 1
Jaundice, ...	2	...	2	100	1 „ 1
Leucocythemia splenica, .	1	1	...	...	...
Menorrhagia, . . .	3	3	...	...	...
Morbus cordis, . . .	8	6	2	25	1 in 4
Otitis, ...	2	2	...	...	...
Parotid swelling, . . .	18	15	3	16·6	1 in 6
Pharyngitis, . . .	2	...	2	100	1 „ 1
Phthisis, ...	4	2	2	50	1 „ 2
Pneumonia, ...	4	3	1	25	1 „ 4
Pleurisy, ...	9	7	2	22·2	1 „ 4·5
Puerperal hysteritis and peritonitis, ...	1	...	1	100	1 „ 1
Syphilis, ...	2	2	...	...	...
	193	144	49	25·38	1 in 3·9

From this it will be seen that complications referable to the pulmonary organs have been by far the most frequent; they constitute more than half the total number. Excluding the cases complicated with phthisis, and taking only those in which the pulmonary affection sprung up during the course of the fever, we find that 103, or 5·78 per cent. of the total 1750 cases, were so affected. Of the 103 cases, 26 died, being at the rate of 1 in 3·9, or 25·2 per cent. They thus form 14·9 per cent., or 1 in 6·6, of the total number of deaths, and exactly two-thirds of the total number of fatal complicated cases. It should be borne in mind, also, that in the table are given only those cases in which the lung complication was of a grave character. Many others, nay, the majority, of the cases treated, had more or less bronchial affection. The presence of some pulmonary affection has been the rule throughout the epidemic. By far the most common complication was bronchitis,[1] 1 in 2·19, or 45·5 per cent., of the total complications were due to this affection. Of the cases complicated with it, 25 per cent. died.

Of the pulmonary affections, the next in frequency was pleurisy, which (including two cases noted empyema in the table) occurred about once in 160 cases, and formed 5·69 per cent. of the total complicated cases. Pneumonia was rare; it occurred in only four of the 1750 cases, or about once in 440.

Pulmonary hypostasis I have not ranked amongst the complications, not because it has not occurred, but because it is to be regarded, I think, less as a complication than as a concomitant; less as a separate affection appearing during the course of typhus, than as a sign of great prostration indicating the severity of the attack. It has existed to a greater or less extent in most of the severe cases; in every fatal case in which a sectio was obtained, this condition of the lungs was found.

Parotid swelling occurred in 18 cases, or in rather more than 1 per cent. of the total 1750. In 9 of the cases the right parotid was affected, in 7 the left, and in 2 both glands were swollen. In only 2 of the 18 cases did suppuration not take place. In 1 case the swelling did not appear until several days after the establishment of convalescence.

Convulsions occurred in 8 cases, of which 4 recovered,—an unusually large number of recoveries from so fatal a complication; in all of the 8 cases there existed an albuminous state of the urine.

Epistaxis has been put down as a complication only when it occurred to such an extent as to have a bad effect on the patient. In 2 of the 6 cases the nose had to be plugged.

Amongst the 7 cases noted in the table as being complicated with gangrene of parts not subjected to pressure, are 3 worthy of a little more notice. The first was that of a young woman suffering from sores on the labia, and gonorrhœa, in whom the whole of the labia became gangrenous and formed one large fetid slough. Before it showed any signs of separating, she died.

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[1] It occurred nearly once in every twenty cases.

The second was also a young woman afflicted with gonorrhœa. In this case excoriations, and finally a small slough, appeared on the upper and inner part of each thigh; these separated, and she made a good recovery.

The third case was that of a man affected with gonorrhœa. There was a very abundant discharge, and it was impossible to keep him so clean as was desired: a gangrenous patch appeared at the lower part of the prepuce, and spread until fully three-fourths of the prepuce was involved in a slough, which ultimately separated. The patient made a good recovery.

In all the cases of typhus that I have seen, in which gonorrhœa co-existed with the fever, the discharge has been greatly increased in quantity, and the local irritation much more marked during the continuance of the febrile state.

Jaundice, an almost inevitably fatal complication, occurred in 2 cases, both of which died: in 1, the jaundice had existed for sometime previous to the febrile attack. In 8 cases there occurred abortion or miscarriage; 1 of these died from hysteritis and peritonitis coming on after the miscarriage.

In 2 cases, pharyngitis occurred. In 1, the inflammation resulted in the formation of an abscess. Both cases proved fatal.

The 2 cases in which diphtheria was the complicating malady were both boys of 11 and 14 years. In one, in which recovery took place, the complication did not appear till during convalescence; in the other, which proved fatal, the disease sprung up during the course of the typhus.

Of 581 uncomplicated cases which recovered, and in which the date of commencement of the patient's illness was satisfactorily ascertained, the duration of the fever was found in 1 to be 9 days; in 24, 10 days; in 64, 11 days; in 112, 12 days; in 110, 13 days; in 127, 14 days; in 72, 15 days; in 26, 16 days; in 28, 17 days; in 13, 18 days; in 2, 19 days; in 2, 20 days; being an average duration for each case of 13·39 days. I may as well mention that the cases given here were undoubted typhus, and that all had a well-marked commencement.

Of the 581 cases, 249 were males and 332 females. Of the males, 13 had a duration of 10 days; 35, of 11 days; 44, of 12 days; 54, of 13 days; 52, of 14 days; 30, of 15 days; 6, of 16 days; 10, of 17 days; 4, of 18 days; 1, of 19 days; being an average duration for each of 13·17 days.

Of the females, 1 had a duration of 9 days; 11 of 10 days; 29 of 11 days; 68 of 12 days; 56 of 13 days; 75 of 14 days; 42 of 15 days; 20 of 16 days; 18 of 17 days; 9 of 18 days; 1 of 19 days; 2 of 20 days; being for each case an average duration of 13·58 days: almost exactly the same as the male average.

Of 2 cases under 5 years of age, the average duration was 13 days.
8 „ from 5 to 10 „ „ „ 12·5 „
126 „ „ 10 to 15 „ „ „ 12·67 „
137 „ „ 15 to 20 „ „ „ 13 „
99 „ „ 20 to 25 „ „ „ 12·87 „
75 „ „ 25 to 30 „ „ „ 14·02 „
38 „ „ 30 to 35 „ „ „ 13·81 „
30 „ „ 35 to 40 „ „ „ 14·53 „
32 „ „ 40 to 45 „ „ „ 14·34 „
14 „ „ 45 to 50 „ „ „ 11·42 „
11 „ „ 50 to 55 „ „ „ 12·36 „
6 „ „ 55 to 60 „ „ „ 14·5 „
3 „ „ 60 to 65 „ „ „ 15·3 „

The shortest case was that of a female child aged 12, in whom convalescence began after nine days' illness; the longest were those of two females, aged respectively 18 and 26 years, in whom convalescence was delayed till the twentieth day.

It will be seen that from 35 to 45, and from 55 to 65, are the two decades which show the longest average duration; all below 25, and those from 45 to 55, are below the general average; all the others are above it.

These tabulated statements would seem to indicate that sex does not at all influence the duration of the malady, and that age does so only to a slight and, doubtless, variable extent.

Of 83 complicated cases which recovered, and in which the commencement of the febrile attack was clearly ascertained, 1 had a duration of 10 days; 2 of 11 days; 4 of 12 days; 18 of 13 days; 13 of 14 days; 19 of 15 days; 12 of 16 days; 7 of 17 days; 4 of 18 days; 3 of 19 days; being an average duration for each case of 14·71 days; upwards of a day more than the average of uncomplicated cases.

Of the 83 cases, 21 were males and 62 females. The average duration for males was 14·6 days; for females, 15·17 days.

Of 54 uncomplicated cases which proved fatal, and in which the commencement of the fever was clearly ascertained, death occurred in 2 on the 8th day; in 4 on the 9th day; in 8 on the 10th day; in 5 on the 11th day; in 7 on the 12th day; in 8 on the 13th day; in 8 on the 14th day; in 3 on the 15th day; in 5 on the 16th day; in 2 on the 17th day; in 1 on the 19th day; in 1 on the 20th day; being for each an average duration of 12·68 days.

Of the 54 cases, 36 were males and 18 females. The average duration for males was 12·7 days; for females, 12·5 days,—or as nearly as possible the same.

Of 27 complicated cases which proved fatal, and the day of commencement of which was ascertained, 1 terminated on the 5th day, 1 on the 10th day, 2 on the 11th day, 2 on the 12th day, 4 on the 13th day, 3 on the 14th day, 7 on the 15th day, 2 on the 16th day, 3 on the 17th day, 1 on the 21st day, 1 on the 30th day, being an average duration of 14·59 days. Of the 27 cases, 6 were males, and 21 females. The average duration for males was 14·5 days, for females, 14·14 days. The longer duration of these cases than of the fatal uncomplicated cases is due to the fact, that several died of the complicating malady after the fever had ceased. The general summary of the foregoing statements is as follows:—

The average mortality of the total number of cases treated during the last nine years (2492) was 11·11 per cent.

The average mortality of 1750 of these treated during the last two and a half years, when the disease may be said to have been epidemic, was 9·94 per cent.

The average mortality of the uncomplicated cases was 7·92 per cent., whilst that of the complicated cases was 25·38 per cent.

The average duration of 581 uncomplicated cases which recovered was 13·39 days. Of 83 complicated cases which recovered, the average duration was 14·71 days. Of 54 uncomplicated cases which proved fatal, the average duration was 12·68 days. Of 27 fatal complicated cases, the average duration was 14·59 days.

From the commencement of the year 1858 up to March 1864, so far as can be made out from the records of the cases, there sprung up in the house 29 cases. Of these, 24 occurred amongst the servants and officials, and 5 amongst the patients. There is considerable difficulty in getting exact information on this point, however; I therefore do not put forward this statement as absolutely correct. All that I am certain of is, that 29 cases at least originated in the house during the above-mentioned space of time. Of the 24 officials, 16 recovered and eight died; the fatal cases were those of 2 resident medical officers, the matron, and 5 nurses and servants. Of the 5 patients, 3 recovered and 2 died.

From March 1864 down to the end of 1866, I have definite and reliable data regarding this point, and find that during that period (nearly three years) 36 cases originated in the hospital. Of these, 23 occurred amongst the officials and servants, and 13 amongst the patients. Of the former, 22 recovered and 1 died; of the latter, all recovered.

The 23 cases which occurred amongst the officials consisted of 1 attending physician, 3 assistant medical officers, and 19 nurses and servants. The fatal case was that of a night-nurse. Of the 23 cases, 15 occurred amongst those whose duties brought them into direct communication with typhus patients, and in whom the attack was, doubtless, due to direct contagion; 3 occurred amongst washerwomen, to whom the poison was probably conveyed by fomites; the other 5 occurred amongst servants whose duties did not all bring them into contact with the disease. The probable explanation of their occurrence is to be found in the free commingling of the servants, and the impossibility of preventing this in consequence of all their sleeping apartments being close to each other, and away from the wards.[1]

Of the 13 patients who contracted the malady, 5 cases, 2 of which were convalescent from scarlatina, and 3 from enteric fever, were treated in wards adjoining one containing typhus cases; the other cases sprung up in the general wards, situated a floor below the fever wards; at the time of their occurrence, there was a large number of typhus cases in the house. Here it may be well to explain that the Dundee Infirmary consists of 3 floors, the first and second of which are devoted to the treatment of general cases, whilst the third and highest is kept for the reception of contagious diseases—chiefly typhus. By this arrangement, the separation of the fever from the general cases is rendered as complete as it is capable of being in a general hospital.

The above facts have an important bearing on the question of the propriety of having separate establishments for the treatment of fever cases. My own opinion is, that every town which is subject to epidemics of typhus ought to have a fever hospital; at the same time, I am sure that typhus is quite a preventable disease, and that, if our towns were properly constructed and not too densely populated, it would erelong disappear from our midst. The question, therefore, will always arise, "Might not the money required for the construction and maintenance of a fever hospital be better employed in improving and increasing the dwellings of the working classes, and doing away with the conditions which give rise to typhus?" The answer to this would depend entirely on the town in question. A measure of sanitary reform, sufficiently sweeping in character to eradicate typhus, would, in some of our large towns, meet with insurmountable difficulties, whilst in others it would be quite practicable.

The chief argument urged against the establishment of such institutions, that the concentration of the fever poison increases the mortality from the disease, is one which is not supported by fact. The mortality from typhus in the Fever Hospital in London is less than that amongst the typhus cases treated in the general hospitals of that city. The mortality in the City of Glasgow Fever Hospital was (as shown in last year's report) nearly 3 per cent. below that in the Glasgow Royal Infirmary.

A second objection, that the risk to the officials is greatly increased, is one of the accuracy of which I have great doubts. I do not think that the risk to the attendants is greater in a fever hospital than it is in a general hospital with special fever wards; but there is a risk to a greater number of individuals when typhus is introduced into a general hospital; for, besides those who look after the fever cases, the other patients and their attendants are exposed to a risk which, I am sure, is infinitely greater than the increase of danger to which the typhus attendants would be exposed by the transference of their patients to a special hospital. We have seen that there sprung up in the Dundee Infirmary during the last nine years, at least 65 cases of typhus—47 amongst officials and servants, and 18 amongst patients; that there died of the former 9, and of the latter 2; and that of 36 of these cases which occurred during the last three years, only 15 occurred amongst those who necessarily came into contact with the typhus patients, whilst 21, or 58·3 per cent., occurred amongst patients and servants who would, in all probability, not have taken the disease had there been a special fever hospital. To my mind, a fact like this far outweighs the objections which have been noted.

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[1] This explanation would also apply to the cases of the three washerwomen.

In the Report of the London Fever Hospital for 1866, it is stated that "1080 cases admitted into that institution communicated the disease to 27 persons, of whom 8 died: in other words, 1 person took the fever for every 40 admitted, and 1 died for every 135. In six of the general hospitals in London, 272 cases communicated the disease to 71, of whom 21 died; or 1 person caught the disease for every 3·8 cases admitted, and 1 life was lost for every 12·9." Facts all tend to show that fever cases are treated with no greater success in a general hospital than in one specially devoted to their reception; and that the risk of communicating the disease (which cannot be wholly done away with) is less in a fever hospital, where the majority of the inmates are protected by either a prior present attack, than in a general hospital, in which such protection is exceptional.

The method of placing typhus cases in a general ward is, I think, quite unjustifiable; it has always appeared to me a most cruel thing to put a patient suffering from an ordinary ailment into a bed next to a typhus patient, where he not only runs some risk of catching the fever, but suffers also a deal of mental distress and anxiety from his exaggerated idea of the risk which he runs. I have on not a few occasions known patients leave the hospital rather than remain in a ward in which there was a case of enteric fever. So many facts have of late been brought forward in condemnation of this method of distributing typhus cases, that its abandonment is probable.

For the purpose of comparing the above statistics with those of some other hospitals, I shall take the London Fever Hospital, the City of Glasgow Fever Hospital, and the Glasgow Royal Infirmary, as being those regarding whose cases most information is attainable. The statistics of the last mentioned hospital are taken from a paper by Dr Perry, in which that gentleman gives the results of his treatment for 1865; the Report of the Glasgow Infirmary does not give the details necessary for instituting a comparison; those of the other two are taken from their annual reports. In order to equalize as much as possible the number of cases for each hospital, I shall take the Dundee statistics for two years—1865 and 1866.

The general result is shown in the following table:—

TABLE IV.—*Showing the Death-Rate in Four Hospitals at each Quinquenniad.*

Age.	Dundee Royal Infirmary.			London Fever Hospital.			Glasgow Royal Infirmary.			City of Glasgow Fever Hospital.		
	Total.	Deaths.	Per-centage.	Total.	Deaths.	Per-centage.	Total.	Deaths.	Per-centage.	Total.	Deaths.	Per-centage.
Under 5	57	1	1·75	32	2	6·4	12	...	...	48	6	12·5
5 to 10	178	2	1·12	146	5	3·4	83	1	1·2	172	2	1·16
10 „ 15	303	6	1·98	231	4	1·7	150	5	3·3	245	3	1·22
15 „ 20	271	10	3·69	282	13	4·6	255	17	6·2	204	15	7·3
20 „ 25	211	14	6·63	242	25	10·4	192	27	14·06	126	16	12·6
25 „ 30	163	20	12·26	204	25	12·3	116	18	15·51	78	11	14·1
30 „ 35	97	13	13·4	185	38	20·5	79	10	12·65	80	15	18·7
35 „ 40	92	17	18·47	151	45	29·8	82	19	23·17	68	15	22
40 „ 45	96	23	23·95	143	52	36·3	51	20	39·21	55	17	30·9
45 „ 50	50	17	34	126	52	41·2	26	15	57·96	33	7	21·2
50 „ 55	40	18	45	102	53	52	16	7	43·75	17	6	35·2
55 „ 60	13	5	38·46	41	22	53·6	15	9	60	18	9	50
60 „ 65	19	8	42·1	48	30	62·5	8	3	37·5	5	3	60
65 „ 70	7	6	85·71	19	14	74	8	5	62·5	4	2	50
70 „ 75	...	...	...	8	6	75				...	...	...
75 „ 80	...	...	...	1	1	100				1	1	100
Total,	1597	160	10·01	1961	387	19·7	1093	156	14·27	1154	128	11·09

It will be seen from this that there is a great difference in the average death-rate of the four hospitals. It is lowest in Dundee, 10·01 per cent.; next comes the City of Glasgow Fever Hospital, 11·09 per cent.; then the Glasgow Royal Infirmary, 14·27 per cent.; and highest is the London Fever Hospital, 19·7 per cent. The total number of cases given in the table is 5805, of which 831 died, being an average mortality of 14·31 per cent. Dundee is thus more than 4 per cent., and the Glasgow Fever Hospital more than 3 per cent. below the average; the Glasgow Royal Infirmary is as close as may be to it, whilst the London Fever Hospital is more than 5 per cent. above it.

On examining this table a little more in detail, it is found that in 7 of the 14 of the quinquennial periods, the Dundee mortality is lower than that of any of the other hospitals: in 4 of these, 20 to 25, 35 to 40, 40 to 45, and 55 to 60, markedly so; the Glasgow Royal Infirmary has the advantage in three periods,—under 5, 30 to 35, and 60 to 65; the Glasgow Fever Hospital has the lowest mortality in four,—10 to 15, 45 to 50, 50 to 55, and in those above 65, in the two middle periods the advantage is marked; in no instance does the London Fever Hospital stand first. Dundee holds the post of honour as having the smallest number of deaths in the largest number of periods.

Let us consider shortly the circumstances which influence the mortality, and cause such a difference as nearly 10 per cent. (as we find between London and Dundee) in the death-rate.

First, undoubtedly, stands age, which alone exercises a greater influence than all other circumstances combined; the foregoing tables sufficiently indicate this fact. In these has been adopted the usual and most convenient method of dividing the ages into quinquennial periods. This plan gives a good idea of the ages of the cases treated, with the mortality at each period, but still leaves room for error: thus, the sum total of the ages given in any one quinquenniad may be considerably more in one hospital than in another. Take, for example, the period from 20 to 25; in that are included all the patients who have attained their 20th, but have not yet arrived at their 25th birthday. It is just possible that the majority, or even the whole, of those coming under that period in the Dundee statistics may be barely 20 years of age, whilst those in the London statistics may be all within a very little of 25. Of course, it is at the same time highly improbable; and I draw attention to this simply with the object of showing how large an amount of error (this objection to the division of the ages into quinquenniads being applied to all the periods) may get into our statistics, and how impossible it is to draw accurate comparisons between any two hospitals, even with the fullest details before us. It might serve some useful purpose if each statistician were to give, in addition to the usual tables, the average age of his cases; by contrasting this, as well as the average mortality, a better general idea could be formed of the extent to which age had influenced the death-rate, it being always borne in mind that, as years advance, the death-rate rises with a rapidity out of all proportion to the increase in age. By adding together the ages of the 1750 cases of which I have notes by me, and dividing the sum-total by the number of patients, I find that the average age was for all cases 22·4 years; of the cases recovered, it was 20·5 years, and of fatal cases 37·5. The averages of the 1597 of these cases given in the last table is, as nearly as possible, the same.

Dr Murchison found the mean age of 3456 cases admitted into the London Fever Hospital during 10 years to be 29·33 years; supposing the mean age of the 1961 cases given in Table IV. to be the same, we should at once have a fact which would go a long way to account for the difference in the death-rate in London and Dundee.

The mode of life of the patient affects the death-rate in a minor but not unimportant degree; that hospital which admits the largest number of badly nourished or intemperate people is *cæteris paribus* likely to have the highest mortality; this is a circumstance which cannot be shown in statistics, and is probably one cause of the high mortality from typhus in London, where a greater amount of wretchedness and poverty are to be found than in any other town.

The extent to which complications occur must influence greatly the death-rate, and ought, if possible, to be taken into account in any comparative statement; unfortunately, however, most hospital reports are quite silent on this matter; the only ones which I have containing information on this point are those of the Dundee Infirmary and the London Fever Hospital; a general comparison is therefore impossible. It has already been shown in a former part of this paper, that of 1750 cases treated in the Dundee Infirmary, in which the fact was noted, complications existed in 1 in 9·06 or 11·02 per cent.; that the death-rate among the uncomplicated cases was 1 in 13·08 or 7·6 per cent., whilst among the complicated cases (as shown in Table III.) it was 1 in 3·9 or 25·38 per cent.; the average mortality being 1 in 10·05 or 9·94 per cent. These facts speak for themselves; a mere statement of them is all that is required to show the important part played by complications in raising the death-rate in typhus, and how unfair it is to compare the death-rate of a hospital having a large number of complicated cases with that of one having few.

The Report of the London Fever Hospital for last year shows that 1447 of the 1961 cases, or 73·7 per cent., were complicated; the mortality amongst the complicated cases being 38·4 per cent.; the general death-rate being only 19·7. It must be remarked, however, that in that report pulmonary congestion (a very frequent occurrence) is given amongst the complicating maladies, whilst in the Dundee statistics, as already explained, it is excluded. It is probable, also, that diarrhœa (with which 302 cases were complicated in London) has been ranked in the list of complications with less reserve. A slight amount of looseness of the bowels I regard as rather favourable than otherwise; it was only in those cases in which it went so far as to materially weaken the patient, and call for the intervention of remedies to check it, that a place was given to it amongst the complications; to a slight extent it occurred very frequently. In making the above calculation from the London Fever Hospital statistics, I have excluded the cases noted as complicated with pregnancy, and have taken into account only those in which abortion occurred. Making allowance for these differences in the list of complications, it is probable that the ratio of complicated to uncomplicated cases is considerably higher in the London Fever Hospital than in the Dundee Infirmary. If this be the case, we have another fact which contributes largely to account for the difference in the death-rates of the two institutions. It would be well if every hospital report gave a statement of the various maladies with which the fever was complicated, and this on a definite plan, it being understood that only those cases should be considered complicated in which the secondary affection existed to so grave an extent as to influence unfavourably the prognosis or course of the case.

The time at which the patient first comes under treatment is likely to have some slight influence on the result of the case. It is natural to suppose that a case which is subjected to the care and attention incidental to hospital treatment at an early stage of the illness is more likely to have a favourable termination than one, in other respects similar, which has been neglected or mismanaged in a miserable hovel for a week or ten days, and then sent, when not in a state fit for removal, to be treated in a hospital. Such cases must affect for the worse the general death-rate. The mode of house-to-house visitation adopted by the Police Commissioners of Dundee during the late epidemic, and so diligently and effectively carried out by their officials, brought the fever cases under the notice of the Medical Officer of Health at an early stage of their illness, and not only benefited the individual cases by ensuring their early transmission to hospital, but tended also to check the spread of the disease amongst those in the neighbourhood in which the cases occurred. Of 745 cases in which the fact was noted, the average period of illness before admission into hospital was 5·5 days; that for recoveries and fatal cases being nearly the same. It must be borne in mind, however, that the proportion of fatal cases regarding which information on this point could be got was very small, the majority not being in a state to give any account of themselves.

When due allowance has been made for the influence on the death-rate likely to be exercised by each of the circumstances noted above, and each hospital accredited with its own share, it will probably be found that the differences in the mortality are very much reduced, and that there remains but a small margin to be influenced by treatment. The question of stimulation is that which has excited most interest, and regarding which the greatest difference of opinion exists at present. To that question, therefore, my remarks on treatment shall be chiefly confined. Before entering on this, I would give a short statement of the general regimen to which the cases were subjected. Every case on admission had a bath, if in a fit state for it; if not, sponging was substituted, and was repeated frequently during the course of the case. Up to the period of crisis, diet consisted almost entirely of milk and beef-tea, the former being the main-stay, and, in many cases, the only thing taken by the patient up to the commencement of convalescence. The treatment of most of the young patients consisted only in giving them milk and water, separately or together. For some considerable period, dilute nitro-muriatic acid, or some other acidulated drink, was given, partly as medicine and partly as a drink; but, as a general rule, nothing is so agreeable to the patient as cold water, and, latterly, no other drink was given unless specially requested. The hyposulphites got a fair and impartial trial on an extensive scale, and were found wanting. No effect was produced by them on the course or duration of the cases. They formed an exceedingly unpalatable mixture for the patient to take, and increased to a considerable extent the duties of the attendants. Occasionally, and especially amongst females, they produced sickness and a tendency to diarrhœa. They were finally abandoned as useless and disagreeable.

The question of stimulation is one which should be inquired into less in the spirit of an economist than in that of a physician. The rule which should guide us in the administration of stimulants should be to increase as much as possible, by every available means, the patient's chance of recovery. If, by the free administration of wine or spirits, we think that this (however hopeless the case may seem) is increased by one iota, the benefit of that chance we are bound to give him. The real question at issue is the quantity which it is proper to administer. To give on paper an exact or even fair account of the extent to which stimulants have been used in a given number of cases is exceedingly difficult. To say simply that a case was stimulated, or that so many out of every hundred were stimulated, is to convey the idea that the writer has been in the habit of using stimulants in the treatment of his cases, but conveys no information regarding the extent to which they may have been employed. Stimulation may mean two ounces of wine or twenty ounces of brandy. Neither does it serve any useful purpose to say that so many patients were treated, and that such and such a quantity of wine was consumed, being an average for each of so many ounces, when in the calculation are included those who were not, as well as those who were, stimulated. The ages of the cases treated must also be taken into account, old people requiring a much larger quantity of wine and spirits than young. It seemed to me, also, that to take the total quantity of stimulants consumed by each patient was a method likely to lead to inaccuracy, as many cases might have the period of stimulation much prolonged in consequence of the existence of some other weakening cause. To take the average daily allowance seemed also open to objection, as being likely to lead to an understatement of the extent to which stimulation was carried, besides being more difficult of application than the plan which has been adopted of taking the largest quantity taken continuously for twenty-four hours by each of the cases, adding these together, and dividing the sum total by the number of cases stimulated, and so getting the average of the maximum daily allowance. Of course, in making such a calculation, the cases not stimulated are entirely left out. This method possesses the advantage of showing better than any other, I think, the extent to which stimulation has been carried; at all events, the average is not understated. The result will be more readily seen by dividing the ages into fewer periods than by adopting the division into quinquenniads. I shall, therefore, divide them into three classes, those under 25, those from 25 to 50, and those from 50 upwards. The result is seen in the following table, into which has also been introduced a statement of the average death-rate. The 16 cases whose ages were not noted have been left out.

TABLE V.—*Showing the amount of Stimulant given.*

Year.	Age.	Percentage of Cases Stimulated.	Average Maximum Daily Quantity.		Average Mortality.
			Wine.	Spirits.	
1858	Under 25 . .	37·5	2·6	.	12·5
	25 to 50 . .	50	3·5	.	25
	Above 50 . .	50	2	3	50
1859	Under 25 . .	43·05	5·3	·5	8·3
	25 to 50 . .	82·5	5·03	1·1	27·5
	Above 50 . .	100	7·7	2·5	14·2
1860	Under 25 . .	36·8	4·4	·4	5·2
	25 to 50 . .	57·6	5	1·5	19·2
	Above 50 . .	100	2·3	2	33·3
1861	Under 25 . .	38·4	2·7	·6	10·2
	25 to 50 . .	93·4	2·5	1·8	21·7
	Above 50 . .	100	6	1·6	100
1862	Under 25 . .	70	3·7	·38	3·3
	25 to 50 . .	90	4·1	1·05	5
	Above 50 . .	100	5·3	3·3	66·6
1863	Under 25 . .	50·7	3·2	·6	3·5
	25 to 50 . .	82·4	3·4	1·6	23·06
	Above 50 . .	80	2·7	3·6	80
1864	Under 25 . .	24·3	4·2	·7	4·2
	25 to 50 . .	64·5	5·3	·5	15·05
	Above 50 . .	100	6·6	3·3	83·3
1865	Under 25 . .	17·5	3·8	1·5	4·07
	25 to 50 . .	70·7	3·1	3·8	17·2
	Above 50 . .	100	1·28	5·9	45·2
1866	Under 25 . .	20·2	3·1	1·8	2.19
	25 to 50 . .	72 8	1·7	4·8	19·1
	Above 50 . .	91·8	·9	8·5	48·6
Total	Under 25 . .	25·8	3·5	1·09	4·06
	25 to 50 . .	73·7	3·2	3·07	18·8
	Above 50 . .	95·3	2·1	5·7	50
	General Averages	44·7	3 19	2·6	10·9

It thus seems that of 2476 cases, 1107, or 44·7 per cent., were stimulated; the average of the maximum quantity given to each case *per diem* being 3·19 ounces of wine, and 2·6 ounces of spirits. Of those under 25 years of age, 25·8 per cent. were stimulated, the average for each being 3·5 ounces of wine, and 1·09 ounce of spirits; of those from 25 to 50, 73·7 per cent. got an average of 3·2 ounces of wine, and 3·07 ounces of spirits; whilst of those above 50, 95·3 per cent. were stimulated, the average maximum quantity being 2·1 ounces of wine, and 5·7 ounces of spirits.

It will be observed that during the last three years, but more markedly during the last two, the percentage of cases stimulated under 25 years of age is considerably less than during any of the years which precede; the quantity of stimulant given is, at the same time, just about the average; the death-rate being slightly below it. It will also be seen that in the other two periods of those years, there is a considerable increase in the quantity of spirits administered, whilst the amount of wine given is below the general average for the same periods; both the percentage of cases stimulated and the death-rate being very near it.

These two facts indicate the principles on which treatment has been conducted. In young people, as a rule, stimulation is not called for to any great extent; whilst, in old people, the contrary holds good. In the young, the danger is not so much from failure of the cardiac action as from the head-symptoms; death in them is due less to asthenia than to coma. It is comparatively rare to find in a young patient the almost imperceptible cardiac impulse and inaudible systole which form so frequent and anxious a feature in the cases of old people, into the mode of production of whose death asthenia enters largely. True it is that every now and then a case occurs in a young person demanding a pretty liberal administration of stimulants, just as one occasionally meets cases advanced in life characterized by unusual mildness; these are exceptional, but serve well to show the fallacy of laying down any general rule of treatment founded on the ages of the patients, and making no allowance for individual peculiarities. When free stimulation is required, spirits are more convenient than wine; an ounce of spirits represents a greater amount of real stimulant than double the quantity of wine. It was not a very uncommon thing, in treating the above cases, to order 12 ounces of spirits *per diem*, half-an-ounce every hour; seldom has stimulation been carried beyond this for more than a few hours at a time. The mode of treatment to which the cases included in these statistics, at least those admitted during the last three years, were subjected, may be characterized as mainly dietetic in the early periods of life, and freely stimulant in the more advanced periods. The success which attended it may be, and very likely is due in part to some of the agencies noted in an earlier part of this paper; but the fact remains that, with this treatment, there is a death-rate considerably below that of most other hospitals. A good deal has of late been said about the harm likely to accrue from over-stimulation in typhus. My own very strong impression is, that whilst a deal of harm may result to young people from the indiscriminate adoption of this method of treatment in all cases, a great deal more injury would result to elderly patients from its abandonment, and the substitution of a non-stimulant plan. The only truly rational plan is to do with typhus as with every other disease,—treat each case on its own merits, but have constantly before us the lessons taught by experience and observation, that age increases immensely the fatality of the disease, and that in elderly persons death is threatened by failure of the heart's action to a much greater extent than in young people, in whom the head-symptoms must be looked to as the chief source of danger.

Part Second.

REVIEWS.

Minutes of the General Council of Medical Education and Registration of the United Kingdom for 1867.

ANOTHER session of the General Medical Council has not passed away without leaving its mark on the medical education of the country. The large class of unreasoning men who looked for great and immediate results from the passing of the Act of 1858, will, of course, be disappointed. They expected that medical education would be forthwith revolutionized and quackery exterminated, and they have yet to learn that sudden changes are as much to be deprecated in a body politic as in a body natural, and that heroic remedies are less and less relied on as wisdom comes with experience.

Another class of grumblers are those who perpetually tell you the composition of the Council might be improved; and undoubtedly, like everything human, it might; and yet, take it all in all, it would be difficult, by any mode of selection or election, to bring together twenty-four members of the profession more thoroughly aware of its educational wants and requirements, and more thoroughly determined to remedy them. It has indeed been argued that the great body of the profession, apart from the colleges and universities, is not represented in the Council. We are at a loss to see how such a representation would be possible, or how a constituency, composed of all registered practitioners, could select. And we do not think that any of the voluntary medical associations could form a sufficiently definite or permanent constituency, so as to represent adequately the interests and wants, as apart from the prejudices, of the profession.

We presume the six members nominated by the Queen are sent to neutralize the college and university element; but in their anxiety to choose the ablest men, Her Majesty's Ministers have, in most instances, sought them within the walls of the incorporated bodies, and in the few instances where they have not done so, those whom they have sent have not been men able to cope with the talented representatives of these corporations, and have never become leaders of thought or opinion in the Council. The remedy appears to us to consist in the profession generally joining one or other of the great medical incorporations and compelling them to liberalize their laws in accordance with the spirit of the age, so as to give all their members a share in the management, or at least a voice in the election of the managing body, and then they will become truly representative bodies through which the wants and wishes of the profession can be made known and schemes for its elevation and improvement can be discussed. It is solely by means of its moral weight, and the loyalty of these bodies who are represented in it, that the Medical Council has been enabled to effect all the improvements it has done. Would not greater power be exercised and greater improvements effected, were the call for changes made from within rather than from without these bodies?

Each session of the Medical Council has been distinguished for some particular work accomplished, and that of 1867 will not be the least memorable, seeing that it presented the profession with a Pharmacopœia worthy of the Council and of the nation; and that it took the initiative in commencing that reform of the examinations which it is the principal object of the supervision of these examinations to accomplish. To both of these we shall refer more in detail hereafter.

The session of 1867 was opened on the 29th of May (exactly that day twelvemonths on which it was closed in 1866), by an admirable speech by the president, Dr Burrows. He commenced by dwelling on the importance of the Recommendations of the Council of 1866 on general education, especially of those which for the first time rendered the examination of a student on general literature really *preliminary* to his entrance on his medical studies. He then paid a just compliment to the "tact, prudence, and forbearance," and at the same time to the thoroughly searching manner with which, with a few exceptions, the visitations of the examinations of the licensing boards had been carried on.

From this he passed to the consideration of the new Pharmacopœia, which he characterized as "the most useful and standard work ever published for general use throughout the country." In passing, he paid a just tribute to the "energy, tact, and experience" of Dr Quain, the secretary of the Pharmacopœia committee, and to the labours of Professor Redwood in its preparation.

He next detailed the various steps which he had taken and the various interviews he had held with Mr Walpole, the late Home Secretary, in regard to the Medical Acts Amendment Bill, which, notwithstanding the tact, the zeal, the firmness, and command of temper which Dr Burrows had displayed throughout the protracted and irritating negotiations, had ended in a letter from Mr Walpole, dated 20th May, in which he first tauntingly reminded the Council that they had deviated from the form of Clause XI. as settled last year by the Home Office, and then informed them that, should they now accept a clause amended by the Home Office counsel, Government would not oppose the bill. He, however, declined to introduce the bill as a Government measure, and suggested that the Council should entrust it to some independent member.

The clause which accompanied this remarkable letter provided for the registration of the holder of any foreign or colonial degree or license, provided it was granted after such a course of study and examination as guarantees the possession by the holder of sufficient knowledge and skill; this to be judged of by the Medical Council, *or by one of Her Majesty's Principal Secretaries of State.*

The communication from Mr Walpole excited very great surprise, and a natural display of irritation, and for once the Council seemed a unanimous body. The only difference of opinion was whether a committee ought to be appointed to consider Mr Walpole's communication, and draw up a fitting reply to it, as proposed by Dr Paget of Cambridge, and supported by Mr Hawkins, Drs Sharpey, Alexander Wood, Christison, Embleton, Sir D. Corrigan, or at once to inform Mr Walpole that they never could accept a clause such as that proposed by the Solicitor to the Treasury, and that the Council, a body called into existence by the Government, considered that it was quite inadmissible for them to request any private member to introduce an Amendment Bill. This was proposed by Mr Syme, and supported by Dr Andrew Wood, but ultimately withdrawn. When we say the Council were unanimous, we had almost forgot the representative of the College of Surgeons of Ireland, who was of opinion "that it would be better for the Council to throw their pride overboard, and apply to some private member of the House to assist them."

At the meeting of the 30th May, the letter to Mr Walpole, as prepared by the committee, was brought up, and, after one or two slight alterations, unanimously adopted by the Council. The letter first sets forth the impropriety of any bill to amend the Medical Act being brought into the House otherwise than as a Government measure; and, second, expresses an opinion that the provisions of the clause proposed by the Government Solicitor were so objectionable that the Council could take no part in the promotion of any bill which contained such a clause. A deputation was appointed by the Council to wait upon Mr Gathorne Hardy, Mr Walpole's successor in the Home Office, and explain to him the views of the Council in regard to the bill. At the meeting on the 5th of June, the Council, by a very large majority (17 to 4), agreed to a clause, proposed by Dr Paget, instead of the one suggested by the Solicitor to the Treasury, and the deputation was requested to bring it under the notice of Mr Hardy, as one which would give sufficient latitude for the admission of the holders of foreign and colonial diplomas, and yet at the same time exercise a check on the admission of persons of insufficient education or doubtful character.

The profession, who have loudly clamoured for some amendment of the Medical Act, and some of our weekly contemporaries who have joined them, and even instigated the cry, will have now no excuse for laying on the Medical Council the blame of the long protracted delays which have hitherto postponed this earnestly desired boon.

The subject of education was again before the Council in its two divisions of preliminary and professional, without much good being accomplished.

Dr Alexander Wood moved for a committee to consider the whole subject of preliminary education, not, as he explained, with the view of altering the regulations agreed to last session, but with the object of being more explicit in the details. The appointment of a committee was opposed, but at last was agreed to; but the report prepared by Dr Wood was so cobbled and altered by the committee that it was scarcely recognisable, and when it came before the Council, Dr Wood found many of the details which he was technically obliged to defend opposed by the very members of committee who had in many instances, contrary to his judgment, insisted on their being added to the report. Under these circumstances, he declined to proceed with moving the adoption of the recommendations of the report, which, thereupon abandoned by its natural protector, was not warmly entertained by the Council; and only two recommendations were, after a division, adopted; one declaring that the Council will not consider any examination in English sufficient that does not fully test the ability of the candidate,—1*st*, To write a few sentences in correct English on a given theme; 2*d*, To write a portion of an English author to dictation; 3*d*, To explain the grammatical construction of one or two sentences; 4*th*, To point out the grammatical errors in a sentence ungrammatically composed, and to explain their nature; 5*th*, To give the derivation and definition of a few English words in common use; and another, to remove from the list of examinations accepted as equivalent to a medical entrance examination all those which do not in all respects come up to the minimum laid down by the Council. This last resolution will not take effect until 1868, which will enable the various bodies whose examinations are deficient to supplement them if they are so disposed.

In attempting to get the Council to define the minimum of professional study which should be undergone by entrants on the medical profession, Dr Andrew Wood was scarcely more fortunate. He was opposed, as a matter of course, by Sir Dominic Corrigan, who, having once maintained that the Council was an inefficient body, has done his best ever since to make it so. In this opposition Dr Storrar joined, and it was so far successful that Sir J. D. Corrigan's amendment, declaring that it was not advisable to enter on the consideration of the course of study, the regulation of which ought to be left to the licensing bodies, was carried by 10 to 8. Sir J. D. Corrigan's amendment then became a substantive motion, and the discussion on it was adjourned to the following day. After a long debate a division took place, when the numbers were declared equal (10 to 10); on this the President gave his casting vote against Sir D. Corrigan. After this, Dr Quain moved and carried by a large majority (17 to 5) the appointment of a committee to consider and report what are the subjects without a knowledge of which no candidate should be able to obtain a qualification to entitle him to be registered. The report of this committee was laid before the Council on the 7th June. It embraces no fewer than ten subjects: Anatomy,—general and descriptive, Physiology, Chemistry, Materia Medica, Practical Pharmacy, Medicine, Surgery, Midwifery, Forensic Medicine. The only discussion the reading of this report raised in the Council was as to whether Botany should not be added; the proposal to do this was, however, negatived. We suspect most members of the profession will agree with Dr Alexander Wood's exclamation,—If this be your minimum, what will you propose as your maximum? for if a student really had his knowledge on all these subjects tested by a thorough and searching examination, and passed the ordeal with success, he would certainly be fit for a much higher place than the lower walks of our profession. Our readers will be at no loss to see the important practical bearing of this decision. It will sooner or later compel every body to institute a complete examination. The College of Surgeons of England will be forced to add Medicine, Chemistry, Materia Medica, Midwifery, and Medical Jurisprudence to the subjects on which candidates for its license are examined, while the Apothecaries' Company must examine on Surgery. Each qualification will therefore hereafter require to be complete in itself, as those granted by the Scotch corporations have long been.

On the third day of the session (May 31), Dr Andrew Wood moved and carried the appointment of a committee to consider the reports of the visitation of examination, and to make such suggestions, founded on these reports, as may tend to improve the examinations. The labours of this committee, of which Dr Andrew Wood was chairman, were most abundant. From the day succeeding their appointment until the last day of the session, when they gave in their report, they met daily, and generally sat for two or three hours. The result has been that the report submitted by them on the last day of the session will form one of the great features of this year's proceedings. We do not, indeed, consider the report faultless. The committee had before them certain documents—the reports of the visitations of examination. To these they should have adhered. But it appears from the report that members of the committee were allowed to interpolate explanations and apologies in regard to matters referred to in the reports of the visitations,—a practice evidently irregular and obviously unfair to those boards whose representatives were not on the committee. Farther, the committee have entered into the minutiæ of a system of marking the value of answers, which gives a fallacious appearance of accurate judgment to what in no case can do more than approximate to uniformity; the value attached to answers depending far more on the character of the examiner than of the answers to which he applies his number. Objectionable, however, as this report may be in some respects, it is extremely valuable as a whole; we trust that it will be extensively circulated and carefully considered by all the examining boards.

A committee appointed to prepare a scheme for the visitation of examinations for next session, after full consideration, reported in favour of continuing the present system for another year. Dr Alexander Wood was chairman of this committee; and as he was known to be a strong advocate for the appointment of special visitors, especially in the Arts department, it was naturally expected that the report would introduce some modification of the plan at present in operation. Either the chairman's views had not found acceptance with a majority of the committee, or he had himself thought it better to have the reports completed under the present system, for the report recommended adherence to it, leaving it, however, to the Branch Councils to say whether every examining body should be visited yearly. We have no doubt the Branch Councils will restrict the visitation to those examinations which have not yet been fully reported on, and to those that were not found to be satisfactory.

We think the decision of the Council to continue the present system for one year longer was a wise one. Members of the Council will be more courteously received and more fully informed on all matters connected with examinations than persons merely deputed by them would be. Eventually, however, we have little doubt that special examiners will be appointed. The refusal on the part of Sir Dominic Corrigan, and some of his supporters in the Irish Branch, and of Mr Rumsey in the English Branch, to assist in visiting the examinations, met with the reprobation in the Council which it deserved. Sir Dominic had ventured to assume the character of a prophet when the visitation by members of the Council was first proposed, and had predicted that the visitations by members of the Council of one another's examinations would be a farce, ending in nothing but unmeaning compliments to one another. A trial of it has shown that his prophecies are as little to be relied on as his facts, and various errors in the method of conducting the examinations have been fearlessly, though mildly, pointed out, and improvements suggested. With characteristic obstinacy, Sir Dominic still persists in refusing to be convinced. He has constituted himself the general obstructor of the Council, and while he opposes every effort which they make to do any real or practical good, he is the first to censure them for their want of action. Combined with his obstructive character, he also exhibits a genuine Irish love of a row. His coat-tails are perpetually being trailed for some one to step on; and he, the representative of an examining board very open to censure, is perpetually acting as the accuser of others. What his own conscience is, we presume not to inquire: he seems to have no faith in the honesty of other men. All examining boards are, according to him, seeking how they may best and most cunningly betray the interests entrusted to them; all supervising boards, how they may safely wink at deceit and imposition. His refusal to believe the statements of Professors Syme and Christison in regard to the alteration in the regulations of the University of Edinburgh, was, we believe, unprecedented in a public body; his refusal to apologize when called on by the chair to do so, was an outrage on the decencies of a meeting; and his persistence in his mis-statement, when documentary evidence was produced for his satisfaction, and the long rambling explanation in which he attempted to cover his ignominious retreat, must have lowered him alike in the opinion of the Council and the profession. It certainly justified Mr Syme in his refusal to act along with him in any committee; and the fact of the Council agreeing that Sir Dominic's name should be removed, in order to secure the services of Mr Syme, showed their opinion of the conduct of both.

As far as the debating powers of the Council go, the most eloquent discussion did not take place on any of the important subjects to which we have referred, but on a series of somewhat visionary resolutions proposed by Dr Acland, the member for Oxford University. Popular as this gentleman is in the Council, by the suavity of his manners and his gentlemanly deportment, and entitled as he is to be listened to as representing an educational body of such importance, albeit its connexion with medicine is not very close, his speculative turn of mind leads him to the discussion of questions more suited for the future than the present.

The resolutions which he proposed as the basis of a new bill were, shortly,—1*st*, To combine the Medical Council with existing licensing boards, the Council appointing assessors to take part in the examinations; 2*d*, To give power to conduct examinations and grant qualifications in hygiene and state medicine; 3*d*, To give power to the Council to expend money in conducting experiments on the action of drugs. The proposal was seconded by Dr Stokes, and was most keenly opposed by Dr Storrar and Dr Andrew Wood. The resolutions were eventually lost on a division, 11 voting for them, and 12 against them. It is a remarkable fact, that not one of those who spoke or voted in favour of Dr Acland's resolutions approved of them in whole. Dr Alexander Wood, Dr Parkes, Dr Bennett, only approved of them to the extent of introducing central examining boards into the three divisions of the kingdom.

In its magisterial capacity, the Council disposed of two cases.

Mr John Forman, a native of Framlington, near Newcastle, has been practising for thirteen years in Fettercairn, in Kincardineshire, N.B. In 1859, he was registered by the Registrar for Scotland, on producing the usual affidavit intended to save practitioners the trouble of sending such bulky documents as their diplomas to the Registrar. He sent an affidavit duly attested by Sir John Forbes of Fettercairn, as Justice of the Peace, as well as by another registered practitioner, that he had produced before them his diploma of the membership of the College of Surgeons of England.

What document he did produce, or whether he produced any; whether either Sir John Forbes' signature or that of the medical practitioner were genuine or not, it is difficult to say. Certain it is, that he could not have produced his diploma from the College of Surgeons of England, for that he never obtained; certain also it is, that Sir John Forbes is dead, and therefore could not give evidence as to the nature of the document (if any) exhibited to him; certain also it is, that Forman could give no more distinct information in regard to the medical friend whose signature supported that of Sir John Forbes, than Mrs Gamp could do of her friend Mrs Harris. Under these circumstances, the Council had no choice but to strike him off the register. He did not even admit, far less apologize for, his guilt. Indeed, at the eleventh hour, he committed an act of effrontery which confirmed the Council in the necessity of severe dealing with such a person. On the day before he was to be tried by the Medical Council, he appeared before the Examiners of the College of Physicians of Edinburgh, and having stated that he was already on the register, and his name being found there, he was subjected to the modified examination in Medicine, Materia Medica, and Midwifery exacted from candidates who have already a qualification to practise. He passed this examination, and received the diploma of the College, and proceeded at once to get it registered, trusting that, if the Medical Council struck him off the register for false registration of the one qualification, he could still remain on the register by virtue of the other.

He was, however, "hoist with his own petard." The registrar at once refused to register the document without farther information. The College of Physicians of Edinburgh has a bye-law by which any licentiate struck off the medical register by the General Medical Council ceases, *ipso facto*, to be a licentiate of that body, so that if Mr Forman became a licentiate of the College on the 29th of May, yet, if struck off the register for having obtained admission thereon by false pretences, on the 30th, he would on that day cease to be a licentiate of the College. The Council of the College, however, as was explained by their representative at the Council, did not take this roundabout course. They at once instructed their law-agent to demand back the diploma which had been obtained by fraud, and to prosecute if it was refused. Mr Forman having, we believe, taken legal advice, surrendered the diploma, and the College, out of pity for his wife and children, handed him back the fees he had paid. The propriety of handing him over to the public prosecutor was hinted in the General Medical Council, but was not formally moved.

The other case was that of the notorious Richard Organ of Cawood, Yorkshire. Probably incapable of passing an examination himself, and not having attended the necessary classes, he hired a man to personate him before one of the licensing boards. His *locum tenens* was, however, rejected; but for this offence Mr Organ was, several years ago, struck off the register. He has since, we believe, attended the requisite classes, but as the different licensing boards have, by an agreement among themselves, determined not to examine a man whose name has once been removed from the register, without permission of the Council, he applied for leave to be examined. The information which had reached the Council regarding him was not very satisfactory; but, nevertheless, some members were inclined to condone his offence. His application was successful so far as to secure the appointment of a committee to consider it; but the committee did not recommend the Council to grant its prayer.

The usual returns from the Army and Navy Boards were given in, and amply justified our remarks made last year upon their insufficiency as a test of the strictness of the various examining boards. Dr Alexander Wood clearly showed this, and was requested to suggest a form of return that would remedy some of the evils complained of. He also produced a letter from a candidate who had been rejected by the College of Physicians of Edinburgh, stating that, a few days after, he had passed the army board, and hoping the College would now give him his diploma.

The returns of the number of students passed and rejected by the different boards, prepared by Dr Embleton, was given in. They are much the same as last year, except that a falling off on the whole number of students is indicated. The proportion of those passed and those rejected is much as before. The large number annually rejected speaks of something far wrong in the system of education, which urgently demands the attention of the Medical Council. Had Dr Andrew Wood's motion for a committee to inquire into and report on this system been carried, some remedy for this evil might have been devised.

The plan we commented on last year, of increasing the powers of the executive committee, was carried out and extended. We cannot approve of it. We think it a great grievance that those bodies who are not represented in the executive committee should have important matters virtually settled there; and what we can see, in the minutes of last session, of the workings of the plan, strengthens still more our impression that it will lead to endless heartburnings and jealousies, and, probably erelong, cause a disruption in the Council. If a medical bill be once introduced, each body will be at liberty to secure what alterations it can: and those bodies who are not represented in the executive committee, which is coming every day more and more to be the governing body of the Council, will consider themselves as free lances, absolved from all alliegance, and empowered to amend proposed bills in any direction they may think best.

The financial affairs of the Council are not in a flourishing condition, and the report of the Finance Committee shows that last year the expenditure exceeded the income by £455, 16s. 11d.

The separate account of the British Pharmacopœia shows a balance still due to the Medical Council of £600, on the first edition. Should 20,000 copies of the new edition be sold, this sum will be reimbursed, and a small balance (under £500) be left at the credit of the Council.

Having thus indicated the chief matters which engaged the Council, we conclude by expressing a hope that many excellent reforms auspiciously commenced may be satisfactorily concluded. The Council is becoming more and more a real power, and is doing good work with caution, but with effect.

The only new member was Dr Risdon Bennett, chosen to represent the College of Physicians of London, in room of Dr Alderson, who is now President of the College. He is a real acquisition to the Council, and, having been educated in Edinburgh, has undergone a good deal of the same training which has made the Scotch representatives such useful, efficient, and laborious members of the Council.

On Diseases of the Skin, including the Exanthemata. By FERDINAND HEBRA, M.D. Vol. I. Translated and Edited by C. HILTON FAGGE, M.D. The New Sydenham Society: London: 1866.

On Diseases of the Skin: a System of Cutaneous Medicine. By ERASMUS WILSON, F.R.S. Sixth Edition. London: Churchhill and Sons: 1867.

NUMEROUS, even to profusion, as have of late been the works published on Diseases of the Skin, it is yet with real pleasure that we hail the appearance of an English translation of Hebra's valuable treatise on this subject. The author has been long known in this country as a most acute observer—eminently successful in the treatment of affections of this class, and is regarded by some (and not without reason) as the first dermatologist of his day; still his views are familiar only to the few who have devoted particular attention to this branch of medical science, and hence we think the Council of the Sydenham Society have judged wisely in presenting to their members a translation of his great work on Skin Diseases.

But while thus acknowledging our indebtedness to the Council of the Society for suggesting the publication of this work in their series, to him to whom was committed the arduous, difficult, and at times irksome task of translating it, our thanks are no less due. But in this Dr Fagge was happily much aided and relieved by having to deal with an author who was himself able to revise the translation—to whom appeal could be made in all cases of difficulty, and who was thus able to clear up what seemed dubious, and to amend what did not appear fully to convey his meaning. "Every sheet of the translation," says Dr Fagge, in his preface, "has been read over by Professor Hebra; and every passage in which I felt any doubt as to the faithfulness of the translation, or as to the sense of the original, was underlined by me, and has been accepted by him, or corrected so as to convey the right meaning." We congratulate Dr Fagge very heartily on the success of his translation, on its conscientious exactness, and, at the same time, its perfect freedom from those Germanic idioms into the use of which a translator, unless specially on his guard, almost unconsciously falls, partly perhaps from sheer love of them, although to the pure English reader they are at all times distasteful, and savour of mannerism or of pedantry.

As the study of skin diseases gradually emerged from the chaos in which it had long been sunk, and as physicians began to realize the importance and necessity of devoting more attention to these affections, and ceased to regard the treatment of them as derogatory to their dignity, and fit only for charlatans and quacks, there was felt the want of something like system to guide them in the consideration of these diseases. Not, indeed, that this was wholly wanting; for, even as early as the time of Æsculapius, Hippocrates, and Celsus, attempts at classification had actually been made, as we see from the writings which are still extant, and from many of the terms which are still in every-day use: for example, herpes, eczema, lepra, lichen, etc. But it was not till the last century that anything like a systematic arrangement was set forth. Glancing at some of the more important classifications which have from time to time been proposed, we may pass over those of Galen, Mercurialis, and, of later date, that of our own countryman Turner, which are interesting only as antiques, and which have, as if by universal consent, been abandoned. Their system was based upon the topical distribution of the affections; and these they divided into two grand classes—those diseases which principally affected the scalp, and those which confined themselves, for the most part, to the general surface of the body. Arbitrary and defective as this system was, it commended itself to the general public as a distinction of the simplest order; and traces of it still linger among them in the popular terms,—tetter, dartres, teignes, etc.

Then came, in the year 1776, the classification of Plenk, a physician of Vienna, who assumed the external appearance of the disease as the basis of his system, suggested doubtless by that of Riolanus and Mercurialis. The great defect of this system was, that Plenk confounded with distinct lesions what were mere phases or further stages of the same disease. This became apparent to the acute and searching mind of Willan, and led him, in 1798, to propound his system, though he still proceeded on the same foundation as that of his predecessor. He it was who first described, with exact minuteness, precision, and care, the various elementary lesions of the skin. These definitions are in use all over the world; and his classification, however defective it may appear to some, will continue to be the key to every other system, by whomsoever proposed. It was still further developed by his disciple Bateman, and was speedily imported into France by Biett, who, in doing so, modified and amplified it considerably; and, to this day, it is undoubtedly the most popular in that country. Almost contemporaneously with the classification of Plenk appeared that of Lorry, in France, which was founded upon the supposed cause of the skin affections. These he divided into two grand groups—those which acknowledged an internal origin, and those which were due to an external cause. Thus was again revived the humoral theory of Hippocrates. Differing in some points, and particularly in this latter, but still maintaining the fundamental idea which pervaded this system, M. Bazin has of late given a new impulse to it. Denying, however, that his system is distinguished from those of his predecessors by any mere slight additions, he boldly asserts it to be a complete transformation; and he thus triumphantly exclaims —"We have made a complete *tabula rasa* of all the classifications propounded by those who have gone before us, and constructed upon their ruins an edifice, on which the progress of science may indeed make some modifications, but the foundations of which will resist the encroachments of time." Yet, great as has been the success of M. Bazin's researches, particularly in the parasitic affections of the skin, and most readily acknowledged and appreciated, still his scheme of classification has met with but scant approval, even in his own country. It is felt that he has indeed played the critic to perfection—that he has really made a *tabula rasa*—but that his efforts at reconstruction have not proved equally successful: "he has criticised," says one of his countrymen, "without elevating anything in the place of that which he destroys." The true cause of its failure lies in this, that for one and the same cutaneous affection a multiplicity of causes may be assigned; while, given the cause, the effects of it become visible in the form of an infinite variety of local lesions.

Alibert, again, about the commencement of this century, formed the idea of grouping diseases of the skin into natural systems, after the manner of De Candolle and Jussieu, in botany. And this scheme, after it had been abandoned for many years, has, with several modifications, been resuscitated of late by M. Hardy. But though some among the groups of the dermatoses may fairly lay claim to the title of natural families, yet, in the opinion of Hebra, the chief impediment to the adoption of this classification consists in this, that "some only, not all of the affections of the skin, admit of being thus arranged; the basis of classification is not the same in the different groups; and this system, even if it were practicable, would result in the isolation of dermatology."

Those systems, which are founded on the principle of affixing to the different component tissues of the skin special diseases, have met with small support in any country, evidently because of their unpractical nature. For nothing is more difficult, for even an experienced physician, than dogmatically to assert which individual tissue is the subject of the special affection—whether it be the epidermis as a whole, or merely one of its layers; the derma or only one of its strata; the secreting organs; the vessels; nerves; etc.; while, to the student, such a system is distracting. On this subject Prof. Hebra writes—"The integument is an organ of which the component tissues are very rarely separately affected by disease; being on the contrary, in most cases, all penetrated by the morbid products, so that it is very often impossible to say which strata are more, and which less, involved."

Thus, in the eyes of Prof. Hebra, none of the existing classifications have found favour; and, consequently, he felt himself constrained to propound a system of his own, more in conformity with what he considered the requirements of such an arrangement; and the grand leading principle which guided him in the construction of it was this, that the skin is entitled to be regarded as an independent organ of the body, quite as much as the liver, or the kidney, or the spleen, etc. And not only so, but it ranks as an organ highly organized in its structure, being provided with special bloodvessels, nerves, lymphatics, and a glandular system peculiar to itself. Seeing, then, that this is so, the Professor argues that the same diseases which are met with in other organs of the body are also to be found here; and he unhesitatingly asserts that "the integument, as an integral part of the organism, is liable to no other morbid processes than those to which the other organs of the human body are subject." And while naturally allowing that, owing to the peculiar anatomical condition of the skin and its superficial condition, those pathological processes may be considerably modified, he still takes these as the basis of his system, and erects his classification accordingly upon a pathological foundation.

By way of apology for the introduction of this new arrangement, he sets forth "the inadequacy of the systems which, up to that time, had been drawn up" (when he first brought out his classification in 1844), "the want of uniformity between the method of classifying diseases of the skin, and that applied to affections of other parts of the body;" and this it was, says the learned professor, which "induced me to propose a division of the dermatoses on a pathologico-anatomical basis, in which I adhered for the most part to the doctrines taught by Rokitansky." Accordingly he divided the dermatoses into twelve distinct classes, viz.:—

1. Hyperæmiæ cutaneæ.
2. Anæmiæ cutaneæ.
3. Anomaliæ secretionis glandularum cutanearum.
4. Exudationes.
5. Hæmorrhagiæ cutaneæ.
6. Hypertrophiæ.
7. Atrophiæ.
8. Neoplasmata (Homœoplasiæ).
9. Pseudoplasmata (Heteroplasiæ).
10. Ulcerationes.
11. Neuroses.
12. Parasitæ.

In presenting this classification for approval, the learned Professor says,—"I do not wish to represent my system as free from defects, and to maintain that no better can possibly, at any future time, be proposed. Its faults and deficiencies are only too well known to me. But, in my belief, it is superior to others in this, that though artificial, it is not too refined; and that though it is not a natural classification, it is yet in accordance with nature. For it places together those diseases of the skin which resemble one another in their essential nature; and it makes no arbitrary separations between allied affections." How remarkably the modest preface of the German Professor contrasts with the self-laudatory announcement of his French contemporary, quoted above!

This volume is devoted to the consideration of the first four classes. The first chapter treats of "the General Pathology and Symptomatology of Cutaneous Diseases," in which are defined the primary and secondary symptoms of Efflorescence. Now, though this may sound a somewhat dry subject of discourse, yet, on looking into it, the reader will find that it is full of practical hints, thrown in in the form of notes suggested by the subject under discussion, and precisely on those very points upon which one naturally most desires to have the opinion of a man of such extended experience. Take, for example, his views as to the mode of origin of those papules or vesicles which are seated at the entrance of a hair-sac, as set forth at page 7; his idea as to the cause of the umbilical depression found in certain vesicles; his experience as to the congenital appearance of what are popularly known as "mothers' marks," etc. And throughout the entire volume there will be found interjected, every here and there, many practical hints, suggested by some passing train of thought; and which, though at first sight they may seem somewhat foreign to the subject in hand, may perhaps be all the more welcome to the reader, because unexpected, and which certainly tend not a little to enliven the discourse.

The second chapter enters upon the "Diagnosis, Etiology, Treatment, and Classification of Cutaneous Diseases in general." And chapter third introduces us to the first class of his system—the "Hyperæmiæ cutaneæ," which he divides into active and passive hyperæmiæ. And, while treating of the Erythema variolosum, Roseola variolosa, Professor Hebra seizes the opportunity to throw his authority, based upon an experience of many thousands of cases, into the scale with those who deny that more than one of these exanthemata can be present in the same patient at one and the same time:—"According to some authors, two exanthemata (morbilli and variola, scarlatina and variola, or even scarlatina and morbilli) may exist at the same time and in the same patient. Of this I have never been able to assure myself; and, in my opinion, no proof of it is to be obtained."

Passing over the Anæmiæ cutaneæ, we come to his third class—the "Anomaliæ secretionis glandularum cutanearum." This is one of the most interesting sections of the whole work, because it treats of a subject to which Professor Hebra has devoted special attention, and therefore carries with it peculiar weight. Thus, in speaking of the Bromidrosis pedum, for which it has long been maintained that no cure exists,—while some even go the length of dogmatically asserting that to attempt to cure this peculiarly disagreeable affection, is to shut up a safety-valve which nature has provided for her own relief, and, consequently, only to "drive in" upon some more vital organ this peccant humour,—Professor Hebra tells us, that not only has he a perfect cure for it, but that he has "never, during more than twenty years, seen any other malady arise as a result of the cure of this complaint." The cause of the disagreeable odour which attends this affection, he considers to be due to the decomposition of the fatty matters contained in the secretion, which gives rise to the formation of the well-known series of fatty acids, among which are the caproic and caprylic. In treating of the affections caused by morbid states of the secretions, or by changes in the structure of the sebaceous glands, he divides them into those affections which are caused by excess, and into those due to diminution of the secretion of sebum. Under the first class, he defines Seborrhœa to be "a morbid secretion of epidermis, which is impregnated with sebum, and either forms a greasy coating, or accumulates in scale-like masses upon a part of the skin which is in other respects healthy." And in describing the Seborrhœa oleosa, he avails himself of the opportunity emphatically to state, that he has quite satisfied himself that "there is no disease which deserves the name of Plica polonica." And, in passing, we would call attention to the distinction which exists between the Pityriasis furfuracea, or Pityriasis scrofulosorum of some, the Seborrhœa sicca seu squamosa of Hebra, and the Pityriasis versicolor, which latter is often mistaken for and designated Pityriasis tabescentium seu scrofulosorum. The latter consists of dried sebum, in the form of white branny scales, which appear chiefly upon the chest, face, and back. They are easily removed by scratching, and they also fall off spontaneously in a purverulent state; while the P. versicolor is, as the name implies, parti-coloured, with difficulty removed, and is due to the presence of a fungus, the Microscopum furfur.

The fourth class—the Exudationes cutaneæ—embraces all those diseases of the skin which are caused by exudative processes, or are characterized by the presence of inflammatory products in the cutaneous tissues. Now, a moment's reflection will show that this class must include by far the larger portion of skin affections; and the reader will not be astonished to find that under this head are ranked nearly all the diseases which were grouped by Willan under his orders. Hence, as these are so numerous—upwards of five-and-twenty distinct diseases—the Professor was constrained to subdivide them in some way. This he proceeds to do by first dividing them into acute and chronic exudative dermatoses. The former are again subdivided into A—Acute contagious exudative dermatoses, which include Morbilli, Scarlatina, Variola, and Vaccinia; and B—acute non-contagious exudative dermatoses, which he divides into the three following groups, viz., I. The Polymorphous Erythemata, under which head are included, Erythema exudativum multiforme, Erythema nodosum, Roseola exudativa, and Urticaria. II. The Dermatitides proper—those diseases which are regarded as inflammations of the skin, in the strictest sense of the word—which are subdivided into A—Dermatitis idiopathica, and B—Dermatitis symptomatica; the latter embracing Erysipelas, Furunculus, Anthrax, Glanders, Pustula maligna, etc. III. The Phlyctænoses, whose characteristic appearance consists in the accumulation of fluid beneath the epidermis, so as to form vesicles or bullæ, including Herpes, Miliaria, and Pemphigus acutus.

The second grand group of this very comprehensive class, while partaking of many of the symptoms presented by the foregoing, is yet distinguished from it by the peculiar tendency of these affections to relapse, and consequently by their essentially chronic course. And these dermatoses are distinguished from one another chiefly by the differences in the cutaneous eruptions present in these diseases. And here the learned professor—while dispensing with Willan's classification as based upon an idea seductive in itself, but which "can sustain no close criticism, and is far from being verified by practice," and ridiculing the notion of a Willanist hunting for a solitary macule, papule, or vesicle, as the case may be—yet feels himself compelled to adopt this very system, so unhesitatingly rejected, and to admit that "it is pre-eminently adapted for the purpose of arranging systematically the skin-affections which come under this head." Proceeding upon this plan, he divides the chronic exudative dermatoses into five groups.

The *first* consists of "those diseases which manifest themselves by a superficial redness and slight swelling, affecting principally the papillæ of the cutis; which are attended with an excessive growth of the epidermis, but only with very trifling sensations of itching, tension, or pain." These he styles the Dermatoses squamosæ, and include Psoriasis seu lepra Willani, Lichen exudativus, and Pityriasis rubra.

2d, This group includes those diseases whose common characteristic is intense itching; and hence arise those excoriations, the result of scratching, "which form a concomitant symptom, never absent in the pruriginous dermatoses." Under this head fall Eczema, Scabies, and Prurigo.

3d, This group, the Dermatoses acneiformes, includes "those tubercular and pustular affections which arise from inflammation of the hair-sacs and sebaceous glands," viz.: Acne vulgaris seu disseminata, Sycosis seu acne mentagra, and Acne rosacea.

4th, The Dermatoses pustulosæ are those affections which are due to an accumulation of pus beneath the cuticle; or, in other words, to the formation of sub-epidermal abscesses or pustules. They differ from those merely accessory pustules which show themselves in the course of some other skin affections, in making their appearance as pustules from the very first, and constituting the whole eruption. They are named Impetigo and Ecthyma.

5th, The last group embraces the bullous affections of the skin, which he denominates the Dermatoses pemphigosæ, under which name come Pemphigus chronicus, and Rupia.

The present volume ends with the description of the acute exudative dermatoses; but already the second volume is announced as almost ready for distribution to the members of the Society: and so, for the present, we take leave of this excellent treatise, heartily commending it to our readers' attention, and reserving until then any further comment.

This is a new edition, the sixth, of Mr Erasmus Wilson's work on Diseases of the Skin. We do not mean to enter into any detailed criticism of it, as it is a book already well known to all students of dermatology; but certain changes which the author has introduced in his arrangement require notice.

In his method of classifying affections of the skin, Mr Wilson has long been conspicuous as one of the most learned exponents of that system which assumes as its principle the *seat* of the particular lesion, and ascribes to the different component tissues of the skin special diseases. Without entering into a discussion as to whether this be the most desirable method of procedure or not, this much, at least, we may be allowed to say, that it is certainly a most attractive plan of arrangement, and commends itself greatly to the mind of the dermatologist by its apparent simplicity, its rational character, and its conformity to the method adopted in the investigation of diseases affecting other organs of the body. Of course objections, some of them serious enough, may be put forward to this as they have been to every other system that has ever been, or most likely ever will be, proposed. But, of late years, Mr Wilson has materially modified his plan, as set forth in his former editions; and in this volume he presents his readers with a new system, which he styles the "Clinical Classification." By way of explanation, he says—"We assume that we are placed by the bedside of the patient, and that the view that should be taken of the disease before us ought to be such as will embrace all the practical bearings of the disease, and lead inferentially to the soundest method of treatment." And this, he considers, is best attained by dividing the affections of the skin into twenty-two groups, which may be comprehended under eight distinct heads, viz.:—

1. Diseases of the general structure of the derma, which include eczematous, erythematous, bullous, and furuncular affections.

2. Diseases of the special structure of the derma, embracing nervous, vascular, and hæmic affections.

3. Diseases of development, nutrition and growth, which comprehend developmental and nutritive, hypertrophic and atrophic affections.
4. Diseases of diathesis, consisting of alphous, strumous, and carcinomatous affections.
5. Diseases resulting from blood-poison, to wit, zymotic, syphilitic, and leprous affections.
6. Diseases of the epidermis, namely, pigmentary, phytodermic, and ungual affections.
7. Diseases of the follicular apparatus and hairs, which thus take in diseases of the hair-system, of the sebiparous system, and of the sudoriparous system.
8. Traumatic diseases.

Two grand recommendations to the adoption of this system present themselves to the mind of Mr Wilson: 1*st*, "It assumes that its terms, for example, eczematous, erythematous, bullous, furuncular, etc., embody a precise idea, and carry with them, not only a notion of the nature of the disease, but also of the method to be pursued in its treatment." Now, to us, this seems only to be indicating one of its greatest drawbacks, inasmuch as it necessarily presupposes that the student has already a large knowledge of the subject which he is desirous of learning. And this objection has evidently suggested itself to the mind of Mr Wilson himself, and hence he is forced to bid the student revert to the Willanean system before the views embodied in the "Clinical Classification" are undertaken; for, says he, "the details of study will be acquired best through the aid of the classification founded on the signs and appearances of disease, the Willanean classification." The second recommendation to the adoption of the clinical classification is, that "it brings together diseases, which, taken alone, would seem to be distinct and independent of each other; for example, eczema, lichen, impetigo, gutta rosacea; but which, in reality, are due to a similar pathological condition, and yield to the same principle of treatment." Regarding this statement, we would only remark that it is, at least, open to dispute.

Mr Wilson has seen no reason to alter his views as to the rationale of the so-called epiphytic diseases of the skin.

Appended to this volume is a most useful glossary of dermatological terms, which indicates their derivation, quotes the authority by whom they have been introduced, and gives their exact signification. The formulary of selected prescriptions is much extended.

As a book of reference, this work is most valuable. But we fear that that which renders it so valuable in the eyes of the advanced student, viz., those minute details, that multiplicity of divisions and subdivisions, and the almost inappreciable distinctions which lead Mr Wilson to describe so many varieties of the same disease, may prove somewhat disheartening to the beginner.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLVI.—MEETING V.

3d April 1867.—Dr MOIR, *President*, in the Chair.

I. *Dr P. H. Watson* showed two specimens of diseased knee-joints, which he had recently excised on account of articular disease.

II. ON THE ADAPTATION OF VULCANIZED INDIA-RUBBER TO THE MECHANICAL TREATMENT OF DEFICIENCIES ON THE HARD AND SOFT PALATE. BY MR RAMSAY. COMMUNICATED BY DR ROBERT PATERSON.

Mr Ramsay, dentist, of London, exhibited a number of specimens of cleft-palate which had been fitted by him with diaphragms of flexible vulcanized caoutchouc. Some of the fissures as exhibited in the plaster casts were wide and very extensive, and, from the manner in which the muscles of deglutition were implicated, required that any artificial substitute should, at the posterior portion particularly, be soft and elastic. Mr Ramsay's method in the treatment of such cases was to obtain a very correct cast of the parts in plaster, and from this to procure metal moulds in which the caoutchouc apparatus was modelled and fired. As these metal moulds lasted an indefinite period, the process could be repeated from time to time as the vulcanite plate wore out. Some of the cases had artificial teeth on a hard rubber or vulcanite basis, added to the flexible piece, and in all he had met with the most satisfactory results.

Dr Smith remarked,—I believe I was about the first, and certainly about the first in Edinburgh, to whom Mr Ramsay communicated his method of treating cleft palate. His method I conceive to be, in many respects, a great improvement on all previous modes; and going further than artificial palates, I consider that it is even more valuable in certain other cases where artificial substitutes of a similar kind are required. I allude to such cases as those where extirpation of the upper jaw on one or other side has been performed, or where the palate has been more or less destroyed by syphilis or other diseases. I have already employed a similar method of procedure in several cases, the last being one where the superior maxilla on one side was removed by Professor Spence. I have, on the other hand, a case under my care at present where both superior maxillæ were removed by Professor Syme, but where I again do not know whether it might answer as well, or whether I may adopt another line of practice. In the case of congenital fissure, my views, after considerable experience, do not altogether agree, except in certain circumstances, with the insertion of any substance whatever within or between the edges of the cleft. But as any detail here would occupy too much time, I shall, with the permission of the Society, take an opportunity of elucidating these views more fully at a subsequent meeting.

Dr Roberts thought Mr Ramsay's method a great improvement.

Dr P. H. Watson expressed his satisfaction with the specimens exhibited, which seemed likely in many cases in adults to do away with the necessity of surgical interference. But he was still inclined to resort to surgery in the case of young subjects, especially before the education to speak began. He had operated in a case of cleft hard and soft palate, by Langenbeck's method, at as early an age as four months.

III. AN HISTORICAL SKETCH OF CHOREOMANIA, WITH SOME ACCOUNT OF THE DISEASE AS RECENTLY OBSERVED IN MADAGASCAR. BY DR DAVIDSON.

In the absence of Dr Davidson, who has returned to Madagascar, this paper was communicated by the Secretary, and will be found at p. 124 of the present number of this Journal.

Dr Moir remarked on the advantage of medical men who resided abroad communicating observations on the diseases prevalent in different climates.

Dr Sanders observed that there could be no doubt that choreomania was quite a distinct affection from the chorea or St Vitus's dance of Sydenham and of the present day; the former was a psychical, the latter a physical disease. With regard to the leaping ague, spinning-top chorea, etc., nothing very accurate was known as to their pathology. They seemed to be intermediate forms between our common gesticulatory chorea, on the one hand, and various hysterical affections and choreomania, on the other. They were certainly not always, nor even generally, the result of organic disease of the nerve centres. Dr Roth's work, "Sur la Musculation irrésistible," was very instructive in regard to the whole subject. Although the accounts of the so-called epidemics of dancing mania in the Middle Ages had been, no doubt, greatly exaggerated and mixed up with fables and the superstitions of the period, and although the pilgrimages had often been made the pretext for imposture, and for scandalous proceedings resembling the Bacchanalia of the ancients (as Sauvages has asserted from personal knowledge), yet it seemed quite certain that, under certain conditions, dancing mania or tarantism really occurred; the conditions producing it being probably a depressed state of the system, often the result of famine, and along with this, some powerful religious or political excitement. The influence of the latter cause, well known in history, had been partially witnessed recently in our own country in the convulsive attacks observed during religious revivals.

Dr Andrew Wood alluded to the turn-table mania, and remarked on the often uncontrollable tendency in so-called hysterical or psychical spasmodic affections to spread by imitation. In a large school under his medical charge, containing eighty to ninety girls, one of them was affected with a spasmodic cough like the noise of a turkey-cock; this spread to between fifty and sixty, and then changed to imitate the braying of asses. The school had to be dispersed, and the pupils sent home, before it could be stopped.

MEETING VI.

1st May 1867.—Dr MOIR, *President*, in the Chair.

I. ACUPRESSURE IN AMPUTATION OF THE HIP-JOINT.

Dr P. H. Watson showed a specimen illustrative of the effects of acupressure in the superficial femoral artery, in a case in which he had employed this means of arresting hæmorrhage in amputating at the hip-joint. The operation was practised on account of a severe railway accident. The patient when brought to the hospital was extremely exhausted from loss of blood. So soon as reaction was partially established, amputation was performed by antero-posterior flaps. All the vessels were secured by acupressure. The needles were all removed at the end of sixty-eight hours after the operation. The progress of the case was uninterruptedly satisfactory till three weeks had elapsed from the operation. The whole stump healed by the first intention, except a small part of its outer aspect, corresponding to a portion of the posterior flap, which sloughed a few days after the operation. The patient sank at the end of three weeks; but as no sectio could be obtained, the cause of death was doubtful. There were certainly no symptoms of pyæmia. The vessels exhibited showed complete obliteration of the profunda and superficial femoral arteries by plump coagula, which extended as high as the origin of the superficial femoral artery, and in the branches of the profunda as far as their origin from its division into branches.

Dr Watson considered the specimen interesting, in so far as it was an illustration of the safe and satisfactory employment of acupressure for the first time in amputation at the hip-joint.

II. *Dr Duncan* exhibited two sketches taken from cases of aortic aneurism treated by galvano-puncture.

III. *Dr Duncan* introduced the patient on whom he had operated successfully for cirsoid aneurism, as described in his paper, to be subsequently read.

IV. ON THE TREATMENT OF ANEURISM BY ELECTROLYSIS, BY DR JOHN DUNCAN; WITH SOME REMARKS ON THE ACTION OF GALVANISM ON BLOOD AND ALBUMINOUS FLUIDS, BY DR THOMAS B. FRASER.

This paper will be found at p. 101 of this number of the Journal.

V. A paper was then read by the Secretary, from the author, Dr John B. Tuke, on Cases illustrative of the Insanity of Pregnancy, Puerperal Mania, and Insanity of Lactation. This paper appeared in vol. xii., p. 1083, of this Journal.

MEETING VII.

5th June 1867.—Dr Moir, *President*, in the Chair.

I. *Dr P. H. Watson* showed specimens of the bones of the wrist, excised from a patient the day before. The operation was described. Carbolic acid had been applied to the wound.

II. *Dr Watson* showed the half of the tongue excised for cancer, by means of three écraseurs, according to a new method devised by himself, whereby perfect accuracy in the lines of section is secured.

III. *Dr Grainger Stewart* exhibited a specimen of diseases of the bladder, vagina, and neighbouring veins. The patient had been in labour several days, and the surface of the promontory of the sacrum had been abraded. Sloughing had occurred on both sides of the bladder, followed by phlebitis and thromboses of the iliac veins. Death had taken place suddenly, from embolism of the pulmonary arteries.

IV. *Dr Grainger Stewart* then read a paper "On Dilatation of the Bronchi," for which see page 39 of this Journal for July.

Dr Arthur Gamgee stated that he had invariably found fetid expectoration to be neither acid nor alkaline, but the distillate was rich in sulphur; and although he had not yet succeeded in separating the neutral sulphurous compound, he believed that the fetor was due to it.

V. *Dr Joseph Bell* read a "A Case of Pulsating Tumour in the Orbit, cured by Ligature of the Common Carotid Artery." See p. 36 of this Journal for July.

VI. *Dr Hjaltelin* read a paper "On the Treatment now used against the Hydatidic Disease in Iceland," for which see page 137 of this month's Journal.

MEETING VIII.

3d July 1867.—Dr Sanders, afterwards Dr Omond, *Vice-President*, in the Chair.

I. *Dr Watson* stated that he had that day removed from the knee-joint a large loose cartilage, of the size of half a walnut, by free incision, and had treated the case by the application of carbolic acid paste to exclude the air and prevent putrefaction.

II. A paper was read by *Dr T. J. Maclagan*, late Superintendent of the Dundee Royal Infirmary, "On Enteric Fever in Dundee and its Neighourhood," which appears at page 140 of this Journal.

III. *Dr Stephenson* read a paper "On the Action and Uses of Phosphate of Soda in small Doses," in which the author recommended its use in many cases as a substitute for hydrarg. cum cretâ.

IV. *Dr John Millar* then communicated "Notes on Cases of Poisoning by means of Susumber Berries, by Dr Manners of Jamaica." Dr Millar added observations of his own to the original paper. This communication will appear in an early number of this Journal.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXVI.—MEETING IX.

27*th March* 1867.—Sir James Y. Simpson, Bart., *President*, in the Chair.

I. A CALCIFIED FIBROUS TUMOUR OF THE UTERUS, PARTLY ENUCLEATED SPONTANEOUSLY.

Dr Matthews Duncan exhibited a fibrous tumour of the uterus. The case was diagnosed during life. The patient had considerable bleedings from the uterus only occasionally; she had constant purulent discharge. She generally had not much acute suffering from the disease. She died of peritonitis, commencing in the pelvis. During life, many stony pieces of different sizes were discharged per vaginam. They were solid, and generally having considerably more superficial extent than thickness. The uterus was found, after death, to have an hypertrophied cervix, its length being 1½ inch. The uterus measured from fundus to os internum uteri 4½ inches. The tumour measured 3½ inches in length, 4 inches in the transverse, and 2½ inches in the antero-posterior diameter. More than one half of its surface, including all that was adjacent to the cavity of the uterus, was bare. It projected boldly into the cavity of the uterus. Almost the whole external surface of the tumour was covered by peritoneum only. It had therefore only a narrow band or ring-like covering of muscular tissue separating its external from its internal surface. The internal surface was covered with a bare calcareous shell of about an eighth of an inch in thickness, but the thickness was not uniform. This shell was much cracked and irregular at the edge. Less than a half of the internal surface of the tumour was denuded of calcareous covering, and, unlike the calcareous part, it was shrivelled and depressed below the general outline, instead of being rounded and bulging. The peritoneum covering the external surface of the tumour was injected, and two not quite recent holes, the largest of which would admit a female catheter, were observed: they were evidently produced by the tilting up of thick projecting scales of the shell of the tumour, the tilting up being perhaps the result of the shrinking of the tumour. The uterine peritoneum had several old adhesions to neighbouring parts. The chief was to a fold of small intestine, and between this adhesion and the uterine cavity no evident structure intervened.

Dr Keiller remarked that a tumour somewhat similar, but considerably larger than the one now exhibited by Dr Duncan, was sent several years ago from London, and was presented at one of the meetings of the Medico-Chirurgical Society. The mass was globular, hard, and as large as a child's head. It was sent denuded of those textures which, if attached, would have led to its ready recognition, and it became a question whether the tumour was uterine or ovarian. Dr W. T. Gairdner, then pathologist to the Royal Infirmary, and Dr Keiller, were requested to examine the preparation minutely, and report as to its true nature, which was found to be a calcareous fibroid, so exceedingly hard as to give rise to some difficulty in making a section of it with an ordinary saw. Dr Keiller had the one half of this large tumour in his museum, the other half he believed being still in the possession of Professor Gairdner, now of Glasgow.

II. ON THE PRODUCTION OF INVERSION OF THE UTERUS. BY DR M. DUNCAN.

This paper appeared in the number of the Journal for April last.

Dr Inglis mentioned seven cases, in each of which the presentation was with the occiput to the sacrum or back.

Dr Gordon said that a case occurred lately where the child fell from the mother. The funis was torn, and yet no displacement of any kind occurred.

Dr Duncan stated that inversion could not occur in such a case, as the pain which expelled the child contracted the uterus at the same time.

Dr Moir said he had seen no case of inversion of the uterus. He thought, however, that it might occur even by gentle pressure downwards, when the uterus was in a state of atony, soft and flabby, such as happens in cases of hæmorrhage.

Dr Niven asked the question, How inversion of the uterus could occur if the lower parts of the uterus were tense or contracted?

Dr Bryce put the question, Does partial contraction of the uterus (as of placental portion) produce such general atony of the organ as to interfere with the expulsion of the child?

Dr Duncan replied that much force was not required to expel the child, and that this could be done although the placental portion was paralyzed.

Dr Keiller perfectly remembered the case referred to by Dr Duncan, it being so very unusual that its particulars could not readily escape his recollection. There was no doubt of the encysted and retained condition of the placenta arising in this case from irregular contraction occurring unusually high up in the uterus, it being no common case of what is termed hour-glass contraction communicating with a non-contracted pouch containing the placenta and large clots, requiring to be reached and emptied, in order to stop the nearly fatal hæmorrhage which was going on. Dr K. considered this case, however, as quite exceptional, and always spoke of it as such in his lectures. It was difficult to entirely subscribe to Dr Duncan's views as to the primary cause or starting point of inversion of the uterus, for assuredly the fundal portion was often found contracted, and not relaxed, in such cases. The appearance presented by the contracted and, consequently, greatly thickened walls, as seen immediately or soon after post-partum death, went far, in Dr Keiller's opinion, to corroborate the usually accepted rationale of uterine inversion.

Mr Strangeways related a case of inversion of the uterus in a cow, which was reduced after two hours' hard work and the administration of six ounces of laudanum. He said inversion of the uterus was not common amongst the lower animals.

III. SPECIMEN OF A HETERADELPH, WITH REMARKS. BY MR STRANGEWAYS.

This, a calf, was the first produce of a young cow (heifer), belonging to a farmer in the neighbourhood of St Andrews, Fife, and was sent from thence to Mr Baird, V.S., of this city, who presented it to me. The heifer had passed the ordinary period of gestation (280 days) by fourteen days, before the ordinary signs of parturition began to show themselves, and was in labour for several hours without being able to expel the fœtus; the head and fore-feet only presenting themselves. To assist her, cords were attached to the jaw and fore-feet in the usual manner; but instead of using gentle traction, during the throes, great force was applied, and the fœtus was drawn away by six strong men; in consequence of which great injury was done to the mother, which subsequently died from nervous exhaustion and loss of blood: the calf also was destroyed by the force, having been alive when these men commenced their cruel operations. The labour had lasted eighteen hours.

Mr S. exhibited the double monster, which consisted of a fusion of two calves.

SESSION XXVI.—MEETING X.

10*th April* 1867.—Dr Charles Bell, *Vice-President*, in the Chair.

I. *Dr Milne* exhibited a fœtus, at the birth of which Sir James Simpson had performed Cephalotripsy. The head presented the usual crushed appearance, and the cord was somewhat curiously entwined round each thigh.

II. ON INFANTILE HEPATIC ABSCESS. BY DR R. PEEL RITCHIE.

During the present session, instances of umbilical hæmorrhage and their association with hepatic disease, or malformation, have been alluded to. In last February a case occurred in the outdoor practice of the Children's Hospital, in which there was disease of the liver, but without any hæmorrhage. Believing that the case is of interest, and from its rarity in my own experience, I am induced to bring it before the Society, to ascertain if cases of infantile hepatic abscess are as rare as British authorities on children's diseases state them to be.

On 5th February last, Dr Ramsay, the assistant at the hospital, was requested to visit a female illegitimate child, aged 22 days, who had, ten days before, been committed to the care of a nurse. The child was born at the Maternity Hospital on 14th January. The nurse stated that the child appeared to be well when she got charge of her, but for the preceding day or two there seemed to be "something wrong with it;" and, being anxious about her charge, she took it to the Royal Dispensary and got advice. There she was seen by Dr Pattison, who considered she was suffering from specific constitutional disease. The same afternoon Dr Ramsay called. He found the child was being suckled by the woman to whose care it was confided. There were some aphthæ on the child's mouth, but the nipples of the nurse had not become affected in any way. There was no sickness. The bowels were loose, but not excessively so; the motions were slimy and greenish. It had a slight coryza and cough, but there was no appearance of dyspnœa. The skin was sallow, and on nates, face, and some other parts, there was a light (violet) coloured macular eruption, with a few papules. There was no condyloma. She cried incessantly, by day as well as by night. Dr Ramsay, in ignorance of the professional opinion already expressed, considered the child to be the victim of constitutional syphilis. He did not observe any indications of peritonitis, nor any ulceration about the umbilicus; nor did he observe any peculiarly urgent symptom. The treatment ordered was grey powder in small doses. On 6th February I visited a child in the same neighbourhood, with Dr Ramsay, and on calling with him to see the infant, we found that during the night indications of sinking had occurred, and increased towards morning, when the child quietly expired.

Regarding the case as peculiar, if not suspicious, I advised an examination of the body, which was at once consented to by the nurse and relatives. On 7th February we examined the body—about thirty hours after death. Rigor was feebly marked. The body was not emaciated. The skin was faintly yellow; and on the face and chest were several crescentic spots, considered to be darker in colour than during life, and presenting the appearance of maculæ rather than squamæ. The trachea was quite healthy, and both the lungs were considerably congested. There were clots in all the cavities of the heart. The ventricles were contracted, and on the external surface of the left there was a small purpuric spot of irregular form. There were about three or four drachms of yellow serum in the pericardium, but no evidence of inflammatory action. There appeared to be purulent inflammation of the thymus, but to slight extent. On opening the abdomen, the bowels were somewhat distended with flatus. The peritoneum presented evidence of general inflammation, and was adherent to the parietes over the front of the abdomen. The adhesions were densest on right side, and in several places the omentum was adherent to the coils of intestines. The spleen, pancreas, and kidneys were healthy in appearance, and gave no indications of purulent infiltration. The liver was darkly congested, and when drawn forward to be detached from its connexions it ruptured, and a large quantity of laudable creamy pus escaped. The source of this was found to be an abscess occupying the lower part of the viscus, the larger portion of which occupied the right lobe, but also implicated the umbilical vein. The abscess would probably contain more than one-and-a-half oz. of pus.

There being no head symptoms, the brain was not examined.

So much for the child. I was now desirous of ascertaining in what state of health the mother was, and had an opportunity to examine her on the 11th of February. She was a pale, delicate-looking girl of 18 years of age, rather under the average height. She then suffered from abdominal pain, and was feverish. I ascertained that for more than a year she had been living an abandoned life, and that she did not know who was the father of her child. She stated that she had always enjoyed good health, and had not, so far as she knew, been the subject of venereal disease. She was delivered in the Maternity Hospital on the 14th of January, and left of her own accord on the 24th, and returned to her previous residence. She did not nurse her child; and, whilst in the hospital, did not wash nor dress it, so could say nothing about the appearance of its body; but had charge of it during the night, and found that it rested quietly. Mr Vacher, the house-surgeon of the hospital, informs me that she was considered healthy whilst there, and that the child did not show symptoms of jaundice before its removal—that the funis separated naturally and without hæmorrhage. The mother, for several days before the death of the child, had been suffering much pain. After leaving the hospital, she had rigor followed by pain in lower part of the abdomen, chiefly on left side. I could detect no evidence of syphilis. There was no eruption on skin. The hair had not been falling off. There had been no sore throat, and neither glandular nor periosteal swellings had formed. The skin was dry, the tongue coated, the pulse feeble, and above 100. She had severe pain over the lower part of the abdomen, which was much increased by pressure, especially over the left iliac region in situation of a tumour there, which I considered to be of cellulitic origin. The uterus was larger than it generally is two weeks after delivery. There was no great tenderness over the uterus. She being removed to a relative's house, was placed under treatment, and was dismissed recovered on the 20th of March. During my attendance there had been no signs of syphilis.

The history of this mother and child presents various points of interest; and, amongst others, I desire to direct attention to the following:—

1*st*, The child, by two experienced physicians, Dr Pattison and Dr Ramsay, was believed to be specifically diseased. The chief facts bearing on this point are the previous history of the mother, the eruption on face and nates, and the aphthous condition of the mouth. The condition of the thymus gland after death would, in some measure, substantiate the diagnosis; but, on the other hand, if the infant were syphilitic, it might have been expected that some traces of the disease would have been present in the mother. She was, however, healthy, and does not appear to have suffered at any time from that disease. The question is therefore narrowed to this,—Were the traces of syphilis due to the diseased condition of the father of the child? In the absence of information as to the paternity, I think we may conclude that the source of disease was, in this instance, to be traced to the male. It is a point on which authorities differ; but the capability of the father alone to communicate disease to the child, is supported by Diday and others. On this subject Diday[1] remarks, —"Despite these inherent difficulties in establishing the paternal influence, there are few specialists who have not been able to do so;" and after quoting so many as eight authorities, he proceeds—"These are not the only facts which I could have collected, but they suffice to prove that the syphilis of the child very frequently acknowledges no other cause than syphilis in the father."

It may be alleged the infant was injured by its foster mother. Attending to this possibility, I took advantage of being consulted by her regarding a slight dyspeptic ailment to examine the throat and skin, and to make such inquiries as to satisfy myself that she had not been the contaminating cause; and, moreover, she had only nursed the child for ten days, whilst the rash appeared some time before death, and her own child was quite healthy. I consider, therefore, that the infant was hereditarily affected.

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[1] P. Diday; a Treatise on Syphilis in new-born Children and Infants at the Breast. New Sydenham Society, 1859.

2*d*, The next point to which I would direct attention is the state of the abdomen. There were general peritonitis and abscess of the liver. It is of some interest to inquire to what cause were these due? Sir James Simpson[1] in 1838 published the details of more than twenty cases of fatal peritonitis in new-born children. In six of these the mothers were or had been the subjects of constitutional syphilis. His cases have reference especially to peritonitis existing in the fœtus; and he observes, "Indeed, it appears to me highly probable, from the investigations which I have already made upon this point, that a great proportion of these children of syphilitic mothers that die in the latter months of pregnancy may yet be shown to have perished under attacks of peritoneal inflammation." On this head Diday[2] remarks, "Gubler observed in some of the children affected with induration of the liver evident traces of inflammation of the peritoneal covering of that organ, and thus the opinion of Simpson acquires fresh weight. It is still, however, an open question whether the two lesions may exist separately, or whether, in the cases which Simpson has recorded, a certain degree of induration of the liver co-existed with the inflammation of the peritoneum, but escaped notice."

On the other hand, inflammation of the umbilical vein occurs in the new-born child, and is followed by peritonitis and icterus.

In the case before us there is the other complication, the abscess of the liver. According to Dr Budd, the three chief causes of suppurative inflammation of the liver are—1*st*, injury; 2*d*, phlebitis; 3*d*, ulceration of the intestine. In this instance, we may exclude the first and last; for in injury the abscess generally forms in the outer part of the liver, and there was no ulceration of the intestines. The case is accordingly reduced to this, Was there inflammation of the umbilical vein? To this I reply in the affirmative; for although the portion of the vessel attached to the liver (see specimen) does not now show evidence of being inflamed, that portion of it nearer the umbilicus, where it was implicated in the peritoneal adhesions, was indicative of phlebitis; and, further, it will be observed that the abscess is in the immediate neighbourhood, and involves the hepatic termination of that vessel.

I consider the case, therefore, to present the two conditions of hereditary syphilis, complicated with umbilical phlebitis, terminating in peritoneal and hepatic inflammation; whilst, from the absence of purulent deposits in the lungs or other viscera, I conclude that the affection of the liver had been directly produced. In connexion with this state of the umbilical vein, peritoneum, and liver, it is of interest to note that the prolonged recovery of the mother was caused by cellulitic inflammation.

The third point is, that the case was not complicated by hæmorrhage. This I presume to be due to the liver being secondarily affected, and to there being no malformation of the ducts. It may be further suggested that the cause of the inflammatory condition was the untimely exposure of a syphilitic child.

The fourth point is, that until the day before death the symptoms had been little urgent, and even then were not alarming. Bouchut,[3] whose views on hepatitis command attention, divides that disease into the common and the malignant or severe. The latter is the more rarely seen, and he states that "most physicians have probably never met with it." According to this authority, the symptoms of hepatitis, especially of the malignant form, are well marked.

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[1] Contributions to Intra-uterine Pathology. Part I., Notices of Cases of Peritonitis in the Fœtus in Utero. By James Y. Simpson, M.D., F.R.C.P.E., Lecturer on Midwifery. Edinburgh Medical and Surgical Journal, October 1838.

[2] Diday, op. cit., p. 96.

[3] Bouchut, Practical Treatise of the Diseases of Children and Infants at the Breast. Bird's Edition, 1855.

The last point to which I allude is, that infantile hepatitis is stated to be a rare disease in this country, whilst in France it is of frequent occurrence; and I am desirous of ascertaining if it is as comparatively rare in the experience of the members of the Obstetrical Society as it is in my own. With the exception of the case which I have detailed at such length, I have not had opportunity to observe suppurative hepatitis in the infant.

Underwood, in his book on the Diseases of Children, 5th edition, 1805, under "Icteritia, or Infantile Jaundice," observes, it "seems always to have been improperly conceived of, being either passed over, or treated as a serious complaint;" "and though infants are not very often troubled with the true jaundice like adults, they nevertheless are liable to slighter affections of that kind." And he a little afterwards remarks, that "the true jaundice, distinguished by the skin being everywhere discoloured, as well as the whites of the eyes, seems to be much more common among new-born infants in France than in this country, as appears from a memoir written by M. Baumes, and to which a prize medal of the Faculty of Medicine in Paris has been adjudged." That gentleman is inclined to consider "the jaundice to be occasioned by the retention of the meconium."

Dr Burns, in the ninth edition, 1837, of his "Principles of Midwifery, including the Diseases of Women and Children," alludes to hepatitis and to its complication with peritonitis; but though familiar with hepatic abscess in older children, does not allude to its occurrence in the new-born infant.

Dr West, in his "Lectures on the Diseases of Infancy and Childhood," fourth edition, 1859, states that the icterus of new-born children "is merely the result of the changes which the blood in the over-congested skin is undergoing;" and he afterwards observes—"instances are sometimes met with where it is a symptom of very serious import." "Thus, for instance, it has been observed to attend upon the peritonitis of new-born infants, and in that enteritis which, like the affection of the peritoneum, is one of the endemic diseases of foundling hospitals. It sometimes depends on inflammation of the liver, and occasionally on phlebitis of the umbilical vein,—diseases all of them to which, in private practice, we are strangers."

The last English authority I shall mention is Dr Tanner, who, in his Diseases of Infancy and Childhood, 1858,—a book which I quote as giving a resumé of the opinions of others,—observes that "inflammatory affections of the liver are so very rare in the young, that it is unnecessary to describe them in these pages,"—a statement confirmatory of that of Bouchut, that most physicians have probably never observed severe hepatitis.

On referring to the French authorities, we find that some of them have paid more attention to the inflammatory affections of the liver. Baumes I have already alluded to. Bouchut alleges, contrary to the generally adopted opinion, that "the jaundice of infants always results from a slight or severe inflammatory affection of the liver, which obstructs the circulation of the bile." He states "it is a very frequent disease in the newly-born infant a few days after its birth. One-third of the children who come into the world are affected by it,"—a view with which few of us will be inclined to agree. He divides this acute affection, as I already stated, into two distinct forms, the common and the malignant; "the first is feeble and slight, the other, on the contrary, is very serious and very intense." He considers hepatitis may be due,—1*st*, to compression of the body in delivery; 2*d*, to impression of external atmosphere on skin; and 3*d*, that it is the result of umbilical phlebitis.

Barthez and Rilliet, on the other hand, consider hepatitis to be "an affection very rare amongst infants," and do not agree with Bouchut that the icterus of the new-born child is due to hepatic inflammation.

Billard (Traité des Maladies des Enfans, 1828) found that out of eighty cases of icterus, in fifty the liver and abdominal vessels were gorged with blood, whilst he had counted forty cases of hepatic congestion without icterus. His views do not agree with those of Bouchut on this subject, for he does not consider icterus of the new-born to be a symptomatic affection of the liver; and he is of opinion that nothing is more difficult than to diagnose the inflammation of the liver (p. 419). With regard to abscess he remarks, that "several authors have spoken of abscesses of the liver among the new-born affected with icterus (Baumer, 1806). But as it has already been observed, M. Denis, from numerous autopsies, has not confirmed the true existence of this lesion."

As another continental authority, I may allude to Frerichs, who, in the first volume of his "Clinical Treatise on Diseases of the Liver" (New Sydenham Society, 1860), p. 189, states, with reference to icterus neonatorum, "As a general rule, the origin of this appearance is connected with changes which the function and the circulation of the liver undergo during birth;" and "if we except the less frequent causes which may give rise to jaundice at this or other periods of life, . . we find that *icterus neonatorum* is at one time the consequence of *phlebitis umbilicalis*, but at other times is merely one of the results of the revolutions which take place in the infantile organism during birth." He considered that jaundice is found "in a tolerably large number of newly-born children."

It is evident, therefore, that the views of these writers have been formed from cases observed in different social conditions, but as the case I have narrated shows that abscess of the liver may occur in an infant not subjected to the endemic influences of an unhealthy hospital, it is well for us to have attention directed to such a case, even although it may be dependent on diseases in the words of Dr West, "to which in private practice we are strangers."

Dr Stephenson agreed with Dr Ritchie that there must have been syphilitic taint. He believed that a child might inherit syphilis from the father without the mother being affected. He lately had a case where a child exhibited distinct syphilitic symptoms, but where the mother was entirely free from any taint.

Dr Cochrane coincided in the opinion held by Dr Stephenson, having seen several such cases.

Dr Bryce stated that it was very desirable that all such mothers should undergo a careful examination, so as to test the correctness of the opinions held by the previous speakers.

Dr Keiller's experience led him to the same conclusions as those arrived at by Dr Ritchie in his interesting paper. There can be no doubt as to the rare occurrence of hepatic abscess, especially in so young a subject. The acute inflammatory affections of the liver, without the formation of pus, are not at all common in children; and he (Dr K.) had not seen an acute abscess, although he had repeatedly witnessed cases of albuminoid and cystic enlargements, in the liver of the child. The liver is often very much increased in bulk by this albuminoid infiltration, and embedded cysts may grow so as to contain a large quantity of fluid. Single puriform deposits very seldom occur in the form of hepatic abscess, as seen in Dr Ritchie's case. The liver was often enlarged and otherwise diseased in syphilitic, badly fed, and strumous children; and from what Dr Ritchie had stated, it would appear that syphilis had to do with the morbid condition in the special case referred to. The question of the transmission of syphilis from parent to parent, from parent to child, or from child to parent, was a most interesting one, and the subject presented several very important matters in relation to almost every-day practice. He (Dr K.) had often seen and treated such cases as those referred to by Dr Stephenson, and there could be no doubt as to the frequent appearance of syphilis in the infant, without any apparent evidence of specific contamination in the mother, either in the form of previous primary, or present secondary or constitutional syphilis. The explanation of such a result can only be that of the morbid action of the diseased or contaminated sperm-cell of the male stamping its impress, as it were, on the future child without any immediate influence from the mother, whose general system, however, may be thus ultimately affected. Although such cases are occasionally observed in practice, it often happened that the evidence of the total absence of syphilis on the part of the mother was defective. As Dr Bryce had stated, it was by no means easy to form a correct diagnosis in such cases, for it no doubt often happened that the history was incorrectly ascertained, and the examination imperfectly made. In this opinion he (Dr K.) quite concurred, and referred to cases in proof of this view. It was not enough to examine merely the external parts, as the vulva may present no appearance of chancre, and yet the cervix uteri and passages may, if examined carefully by means of the speculum, be found the seat of syphilitic sores, which Dr K. had frequently witnessed while acting, long ago, as physician to the Lock Hospital. In such cases, the supposed gonorrhœa or leucorrhœa, *i.e.*, the morbid discharges from specifically ulcerated os uteri may prove chancrous to the male, and poisonous to the offspring. He believed that a great number of female complaints and female complainings on the score of general and chronic bad health, were the result of syphilitic inoculation, even in cases where no external or even internal evidence of such a special root of evil could be readily detected. Dr Keiller spoke of cases he had treated, and which went to prove the beneficial effects of the mercurial plan recommended by Diday, etc., that of getting rid of the diseased condition of the fructifying elements in the male as well as in the female, by treatment of both parents before instead of after the occurrence of pregnancy, so as to secure the sperm and germ cells alike against morbific influence.

Dr M'Cowan said that Ricord believed children might be affected with syphilis where the mothers were free.

Dr Bryce thought it difficult to decide such a question, as patients might be affected without exhibiting constitutional symptoms. He related a case of a child two weeks old, where a tumour appeared near the ensiform cartilage, which burst and discharged putrid pus and bile. The case was looked upon as one of abscess of the liver.

Dr Gordon mentioned a case where three children, including twins, had all become deeply jaundiced on the second or third day, and all died of convulsions, while the mother was quite well. She has several children who are still alive, but all were jaundiced more or less. Mercurial suppositories had been used at the suggestion of Sir James Simpson.

Dr Keiller recently had seen a case where two children of one lady died from icterus.

Mr Pridie believed the cause of infantile jaundice in England to be the consumption of pork.

Some conversation followed on the subject of mercurial treatment of syphilis.

DUNDEE MEDICAL SOCIETY.

AT the Monthly Meeting of this Society, held on Wednesday, 3d April, Dr Crockatt in the chair,—Mr G. Smith, surgeon, was elected a member. Dr Crockatt read the following Report of a very interesting case of Embolism of the Popliteal Artery, latterly complicated with paralysis of the right side of the face, and defects of speech, and ending in death.

11*th January* 1867.—J. W., æt. 64.—Is stout made and pot-bellied. Has often had gout, principally affecting the large toes of both feet. About three weeks ago, the left foot was slightly swollen, and red over the dorsum, with stiffness round the ankle, which was brushed over with tincture of iodine, and gradually got better. Has had no pain in any of his feet since then. About a fortnight ago he felt a slight inability to use his left leg when walking, but this wore off in a few days, and he regained the complete power of the limb. To-day, about four o'clock P.M., he experienced a faintish sickness, at the same time became slightly confused, and, all at once, lost the use of his left lower extremity, from the knee downwards. He was immediately got into bed, and, after the administration of some stimulant, the sickness wore off. On examination, the left leg is pale, cold, and deprived of motion and sensation from the knee downwards. No pulsation can be felt at the internal tibial or popliteal arteries, but the femoral is felt to beat at the triangle. Complains of deep-seated pain in the calf, extending from the popliteal space to the ankle, which is not increased by manipulation. Cardiac area of dulness enlarged; heart's action irregular, and accompanied with a diastolic bruit at the base. For some time back has been subject to giddiness, and has complained much of pain across the loins. Pulse 80, soft, intermitting; bowels constipated; tongue clean. To have half-an-ounce of castor oil, and to have flannel wrung out of hot water kept constantly applied to the leg and foot; and the following powder to be taken every three hours:—℞ Calomelanos, gr. ss., pulv. ipecac. co. gr. iij.—M., ft. pulv.

12th.—Bowels have been freely opened with the oil. Has taken the powders as ordered. Temperature of the upper half of leg slightly increased; but the foot and lower half still cold. Has regained sensation to about the middle of leg from the knee. Pain in calf slightly returned. Slept moderately.

13th.—Bowels opened twice during the night; slept well. Has no pain in the calf to-day; but complains of a shooting pain, which extends from the heel in the direction of the large toe. Temperature of lower part of the leg very much improved, that of the foot slightly. The little toe and the surface of the outer side of foot, for about four or five inches in length and three in breadth, have become of a dark livid colour, and are covered with a sanguineous bulla. Feels well otherwise. Temperature of body natural. Takes his food well. The powders to be stopped.

14th.—Temperature of leg and foot much improved, especially the latter, with the exception of the toes and under surface of the foot, which are assuming a dark colour.

15th.—Gangrenous discolouration involves the whole of the toes, extending back to the junction of the proximal phalanges with the metatarsal bones above, and to the middle of the heel underneath; the scarf skin over the toes and sole being loose, and a sero-sanguineous fluid exuding from beneath it. Had considerable pain in foot during the night, which prevented sleep. To have lint wet with a solution of permanganate of potass applied over the foot, and the whole covered with a linseed-meal poultice. Flannel wrung out of hot water continued to leg.

16th.—Slight appearance of a line of demarcation forming on the outer side of foot. No extension of gangrene. Skin hot; pulse 96. Tongue dry in centre; complains of thirst. Bowels opened once to-day. To have ℥ ss. of the mist. ammon. acetatis every two hours.

17th.—Skin moist; pulse 80; tongue moist. Line of separation forming all round. Stop the mist. ammon. acet.

21st.—Suffered considerable pain during the night, and consequently slept little. Line of separation going on. An abscess forming on outer side of foot.

23d.—Abscess incised. About a table-spoonful of healthy pus escaped.

24th.—Abscess discharging freely. Line of separation advancing. Pulse quiet; tongue moist; bowels regular; appetite moderate; less pain in foot. Over the metacarpo-phalangeal articulation of the index finger of the right hand an erythematous blush has formed, accompanied with swelling, pain, and stiffness. To have a linseed-meal poultice applied over it.

25th.—The pain, swelling, and redness of the metacarpal joint of the index finger less. Line of demarcation of foot discharging freely. Pains in foot not quite so severe at night now. Slept better last night.

26th.—Feels better to-day. Separation of slough going on favourably. Pain, redness, and swelling of metacarpal joint of finger almost gone.

February 14th.—There has been little or no change in his condition since last report. The slough has gone on separating favourably, and is all loose, with the exception of some of the flexor tendons. To-day the whole slough, with the phalanges of the toes, have been removed, and a healthy-looking granulating surface left. Has been sleeping better lately, and taking more food. On the whole feels very comfortable. Bowels regular; tongue clean.

2*d March.*—Since last report the ulcerating surface has been looking well, and discharging healthy pus; it has contracted considerably. Has taken his food, and slept moderately, and altogether has been going on very favourably until yesterday afternoon, when his attendants observed something wrong with his speech. I was informed of this, but being unable to visit him I merely ordered a dose of castor-oil. To-day the ulceration is looking well; complains of no particular pain, but says he has a confused feeling about him. Took his breakfast this morning as usual. Features irregular; mouth slightly drawn to the left side. Pupils medium sized, and act to the light. On protruding the tongue it inclines to the right side; when trying to answer a question or make an observation, he is generally at a loss for the last word, or termination of last word, and either forgets it altogether or calls it by some other name. For instance, if he wanted to address me, he would say "Dr Cro," or "Crook;" or asking for a new poultice, he says "new puthy, new puthy;" and if he wishes to ask me how his foot is getting on, he asks the question either forgetting the word foot altogether, or saying "flirt" or "flit." Generally after these vain attempts he feels annoyed and disappointed. Since these new symptoms have set in he has been very desponding, and has a strong presentiment that death is near. Pulse 84, compressible; tongue dirty in centre; bowels regular.

3*d.*—Has passed a very restless night; declares he has slept none, although he has been observed to dose occasionally. No other change.

5*th.*—Not quite so restless last night; slept more. Has been troubled with hiccup two or three times; other symptoms much the same.

6*th.*—Slept a good deal last night; hiccup has been very troublesome. To have ♏ij. hydrocyanic acid in a mixture every two or three hours, and a sinapism applied over the epigastrium. Granulations looking well; other symptoms the same.

7*th.*—Hiccup has been very troublesome all night; granulations looking pale and flabby; temperature of foot a little low. Has taken very little food since yesterday.

8*th.*—Since last night has been very dull, and inclining to sleep a great deal; lies with his mouth open. Foot cold as far as the ankle; granulations have a grey dirty appearance, and a slight putrid smell; says he is all right, and feels no pain. Features pinched and cold; pulse very weak at wrist; has taken no food to-day except a mouthful of table-beer, which he asked for. When spoken to, answers slowly and not very intelligibly.

9*th*, 11 A.M.—Foot cold and discoloured, with dark mottling as far as the ankle; granulations dark coloured, and have a strong putrid smell; temperature of leg as far as the knee cold; hiccup has been almost constant since yesterday. At five o'clock this morning he vomited about two pints of a dark-coloured fluid, which has continued to recur every fifteen or twenty minutes, in small quantities. Skin covered with a cold clammy perspiration; pulse at wrist hardly perceptible; respirations 44; intellect quite clear, but answers only when spoken to, and much in the same way as before. Has slept very little,—not above an hour all night. Has taken no food, only a little of the beer occasionally. Says he has no pain.

4 o'clock P.M.—Died at 2.30 P.M. No sectio allowed.

A vote of thanks was awarded to Dr Crockatt, for reading this very interesting case, and the meeting adjourned.

Part Fourth.

PERISCOPE.

PATHOLOGY.

KÜCHENMEISTER ON CYSTICERCI IN THE BRAIN.

FROM a tabulated comparison of 88 cases, Küchenmeister arrives at the following, among other, conclusions: Cysticerci in the brain occur most frequently between the ages of 20-59, or, rather (as the time of infection and period of incubation are not known), the majority of cases prove fatal between 20 and 60. 51 cases were in males, 34 in females, in 3 the sex was not noted; men are, therefore, one half more frequently affected than women. The cysticerci were mostly encysted; only 9 times free; of the latter, 5 times in the ventricles. The seat of the cysticerci in the different parts of the encephalos was as follows: Dura mater, 4 times; arachnoid, 11; pia mater, 23; choroid plexus, 9; surface of cerebral hemispheres, 59; cortical substance, 41; medullary substance of brain, 19; fossa Sylvii, 2; thal. opt. and soft commiss., 15; corp. striat. and ant. commiss., 17; ventricles, 18; trigonum olfactorium, 2; corp. quadrigem. and pineal gl., 3; corp. callos., 2; cerebellum, 18; pons, 4; oliv. body, 1; med. oblong., 2; not mentioned, 5. Confined to one part only, cysticerci were found on the surface of the cerebral hemispheres, in the ventricle, the choroid plexus, the pia mater, and optic thalami. Of the 88 cases, the simultaneous presence of the parasite in other parts ot the body was noted in 11. For the growth and size of the cysticerci, the most favourable situation in the encephalos is afforded by the ventricles, next by the space between the convolutions and the membranes; the firm cerebral substance is less favourable. In the ventricles, the cysticerci may attain the size of a pigeon's or a hen's egg. In regard to symptoms, several groups of cases are distinguished; but the most important are—cases without symptoms (16); cases with slight symptoms, as vertigo, headache, faintness, somnolence (5); cases with one or more of the following symptoms,—viz., disorder of the mind, epilepsy, cramps, tremors, chorea, paralysis, apoplexy, and apoplectiform seizures. In summary, disorders of the mind occurred 28 times; epilepsy, 24; muscular cramps or convulsions, 6; paralytic symptoms, 32; apoplexy, 10; apoplectiform attacks, 1. The motor functions appear most frequently implicated. The symptoms, according to the situation of the cysticerci, were—(*a*) on the surface of the brain, no symptoms in 3 cases; apoplexy, 3; tremors of the extremities with defective memory, chorea, spasms with disorder of mind, of each, 1; epilepsy with disordered intellect, with or without paralysis, 2; (*b*) under the pia mater, involuntary evacuation of fæces and urine, and imbecility, of each 1 case; (*c*) in the grey substance, no symptoms, headache with loss of sleep, epilepsy, of each 1 case; (*d*) in the ventricles, no symptoms, 1; immobility of the neck and eyelids, epilepsy, epilepsy with mental disorder, delirium with twitches of the lips, and pain on moving the legs, of each 1; (*e*) in the choroid plexus, apoplexy, 2; (*f*) in the left opt. thalamus, paralytic imbecility, 1 case. The condition of the brain in cases of cysticerci is not noted in many of the cases; in 7, there was vascular turgescence, with firmness of the brain; in 7 also, deficiency of blood, pallor, œdema, and atrophy; in 1, inflammatory foci in the neighbourhood of the parasites; in 1, ecchymosis; in 10, apoplectic foci; in 4, softening of particular parts of the brain; in 1, indurated cicatrix and chalk concretions in the cortical substance; twice, miliary tubercle in the arachnoid and cerebellum; 13 times, hydrocephalus (2 external, 9 internal, and 2 both external and internal); once, adhesion of the lateral ventricles. Griesinger had asserted that cysticerci in the brain seldom caused paralysis, in consequence of being usually placed at the periphery of the hemisphere; but Küchenmeister controverts this statement, having noted paralysis 23 times in his collection of cases. And further, even although the usual seat of these parasites were at the periphery, so as not commonly to exert pressure to the depth of those parts, the injury of which occasions paralysis, nevertheless, the opinion of Tüngel and Ferber is of great importance, that cysticerci in the brain increase the disposition of the organ to morbid action, and frequently give the impulse to widespreading cerebral diseases.

A recapitulation of Lussana's views may assist to explain the influence of locality. The cerebral hemispheres being the seat of the intelligence, irritation, pressure, destruction (apoplexy), imbibition, and softening of the medullary substances of the brain, may lead to mental disorders of various kinds, if both hemispheres are involved; but if only one is affected, the intelligence may be preserved by means of the healthy hemisphere, while, owing to pressure on the optic thalamus, paralysis of the opposite side of the body will ensue. The paralysis occurs on both sides when both thalami are subjected to pressure. Notwithstanding the pressure on the optic thalami, sensation remains intact, unless the sensory organs are involved,—viz., the laminae opticæ for sight; the medulla oblongata for hearing, taste, and touch; the olfactory lobes for smell; the cerebellum for muscular and voluptuous sensibility; while, contrary to the common opinion, the mesencephalon has nothing to do with sensation. According to Lussana, also, the decussation of the motor fibres does not take place in the pyramidal fasciculi, but in fasciculi which proceed from the motor nuclei of the mesencephalon; the motor fibres do not enter into the junction of the pyramids, but cross from the corp. quadrigem., downwards all along the spinal cord, of which the anterior columns are principally formed by them.

Further, it must be taken into account, that in nearly all cases in which the sectio is accurately reported, other cerebral disease, besides the cysticerci, was found. When hemiplegia occurs, nothing more is required than pressure on the opposite hemisphere and its optic thal.; the falx cerebri protecting the other hemisphere and thal. opt. from pressure. When the cysticerci in one hemisphere are numerous and large, the effusion of fluids may compress the cerebral substance, and give rise to paralysis on the other side also. When the cysticerci occur on both sides, their pressure will occasion general paralysis (on both sides). Muscular tremors, convulsions, spasms, epilepsy, rigidity, difficult movement of certain muscles or groups of muscles, and paralysis, depend upon the amount of irritation or of pressure caused by the cysticerci; and the occurrence of the effects of irritation, or of pressure, is determined by the vascularity of the brain, its power of reaction, the degree and kind of exudation (œdema, hydrocephalus), the looseness of the texture, the position, age, and growth of the parasites. Motor agitation and epilepsy may ultimately pass into paralysis and mental derangement. Where paralysis was present the cysticerci were almost always deep seated, or, if superficial, other important cerebral lesions were ascertained.

The relations of cerebral cysticerci to epilepsy are important. Of the cases in which the locality of the parasites was limited to the surface of the hemispheres, there were 3 without symptoms, 3 with apoplexy, 1, tremors and dulness of intellect; 1, chorea; 1, spasms; 1, mental disorder; 1, epilepsy and mental disorder and motor paralysis; but *not even once* epilepsy alone. When the only seat of the parasites was under the pia mater, there occurred involuntary evacuations and imbecility; when confined to the grey matter, 2 with no symptoms, 1 headache and sleeplessness, 1 epilepsy; exclusively in the ventricle, 1, epilepsy alone; and 1, epilepsy with mental disorder. If we join together the membranes, the surface of the hemispheres, and the grey substance, as the chief seat of the cysticerci, we find apoplexy, 2; disorders of the mind, 3; and epilepsy, 2. Of other cases, where epilepsy was the only symptom, in 1 the white substance, and in 1 the corpus striatum, was the seat of the cysticerci. An important result, overlooked by previous observers, is that, invariably, epilepsy occurs when both hemispheres are affected together;

or, exceptionally, when single organs, as the pons or medulla oblongata (or even the ventricle) are involved. There was only one exception to the rule, but in it there was hereditary tendency. We are not, therefore, justified in ascribing epilepsy to diseases of the periphery (surface) of the hemispheres. The statement of Griesinger, "that palsies are occasioned only very exceptionally by cysticerci or foci, which are situated in the cortical substance, at a distance from the large ganglia and basal parts of the brain, and which grow slowly, and do not exceed a certain size," is thus modified by Küchenmeister, "that cysticerci, placed superficially, cause paralysis; especially when they give rise to apoplectic foci in their immediate neighbourhood, even if these be limited to the peripheral layer, or when they are seated at the base of the cerebral hemispheres near important central parts, or when they attain so considerable a size as to exert from the periphery, inwards, a pressure on the central parts of the brain, which chiefly produce paralysis."

In reference to cysticercal epilepsy, the following propositions are laid down:—1. Only half, and not, as Griesinger states, the majority of the cases, pursue an extraordinarily rapid and tumultuous course till death; attacks, at first rare, become all at once very frequent and violent, or they are at first subacute, becoming always more frequent and more violent till they prove fatal by the supervention of grave cerebral symptoms, delirium, stupor, or extreme exhaustion. A similar course is sometimes observed in other epilepsies, but seldom so strikingly. 2. Common epilepsy is especially a disease of childhood or early youth; it seldom comes on afterwards, and is then frequently a symptom of evident cerebral disease, traumatic, syphilitic, or such like. Cysticercal epilepsy seldom occurs before 20, and is more frequent up to manhood. The absence of other causes, however, and especially hereditary, must be taken into account. 3. Cysticercal epilepsy exhibits very instructive examples of true cerebral epilepsy. It is not necessary that epilepsy should begin with disordered consciousness, nor from the limited spasm of one extremity which spreads and finally becomes general, nor that it should be introduced by an aura. 4. The statement that cysticercal epilepsy never follows the law of crossing, like cerebral epilepsy, when the cerebral cause is unilateral, is only apparently valid. The occurrence of epilepsy when one hemisphere is alone affected is doubtful, except when there is hereditary disposition to mental disease. When the law of crossing is observed, both hemispheres are affected, but some local causes are in operation on one side at the time. 5. Cysticercal epilepsy is more frequent in men than women,—viz., 60 and 40 per cent. 6. Griesinger has no doubt that the increase of the attacks in number and intensity is due to the rapid growth of the cysticerci, which is very likely. 7. Stich ascribes the epileptic attacks to an occasional direct irritation of the brain by the movements of the parasites in protruding their bodies out of the cysts. Greisinger thinks this impossible, but believes that the movements of the parasites may produce irritation and increased transudation in the surrounding capsule; a view much more probable.—*Prag. Vierteljahrschrift. f. d. pract. Heilk.*, iv. bd., 1866,—*from Oesterr. Ztschr. f. pract. Hlk.*, 1866, iii.

SURGERY.

CIRSOID ANEURISM CURED BY INJECTIONS.

PROFESSOR PITHA showed, at the Medical Society of Vienna, a young man whom he had cured of a cirsoid aneurism of the side of the head. It was of large size. The occipital, posterior auricular, and temporal arteries were much dilated, being as large as quill-pens, the temporals and occipitals showed sacs as large as nuts. The auricular was enormous, violet in colour, and showed distinct pulsations. Extirpation was not to be thought of, and ligature of the external carotid would have been useless, as the collateral branches would have carried on the circulation. Pressure, which was borne with much patience, caused œdema without diminishing the size of the tumour. Injection of the sesquichloride of iron was then tried. It formed a clot; the part became hard, suppurated at points, and the tumour disappeared. After ten injections only a little capillary dilatation remained; the occipital, which resisted longest, still pulsated.—*Quoted in Gazette des Hôpitaux*, for January 31, 1867, from the *Alg. Med. Central. Zeitung*.

DISCUSSION ON THE OPERATION OF TREPANNING THE SKULL.

THE attention of the Société Impériale de Chirurgie has of late been much directed to this subject, by the exhibition of cases in which the operation had been performed, and more lately by a regular discussion commenced by M. Broca, which has already occupied the greater part of two seances, and is still unfinished.—(February 27, March 20.)

We have neither space nor inclination to give even a resumé of the opinions of the speakers. One or two of their remarks, however, are worth quoting. M. Broca's view seems to be that in fractures of the cranium with depression trepanning is not indicated, unless cerebral complications supervene; then only when they are urgent, and that the most usual and favourable date will be fifteen days after the accident. M. Perrin, in the course of a long speech, in which he quotes many of his Crimean experiences, states that, in his opinion, trepanning is not indicated, unless the cerebral complication be well defined, localized, circumscribed, and the other cerebral functions are intact. He recommends it in cases of epilepsy, from exostosis, the result of blows, or of limited abscesses of some standing.

So far as the discussion has gone, by far the best, most comprehensive, and sagacious speech is that made by M. Léon le Fort. It is exceedingly able, evinces great study and preparation, and a thorough knowledge of contemporary surgery, both English and American. He holds and proves that while trepanning *may* be performed too often in England (137 cases recorded in the journals in ten years), it *certainly* is performed too seldom in France (only two in the same period). He makes a division of the cases according to the indications for the operation, and arranges them under three heads, which give the following practical result:—

1. Cases of coma, with stertor and insensibility existing from the time of the accident. These generally depend on grave injuries of the brain, probably to effusions resulting from the concussion. Of twenty such trepanned, fifteen died, or 75 per cent. In such cases, M. Léon le Fort holds it safest to refrain from operation, or at least to wait.

2. Active symptoms, fever, delirium, headache, with epileptiform convulsions, without hemiplegia. Of twenty-seven such cases, twenty-five died, or 93 per cent. In most cases, meningitis is present, and the operation should *not* be performed. If, however, there is evidence of wound of the brain from a depression of a portion of bone, trepanning should be performed as soon as possible.

3. Hemiplegia, either alone or accompanied by convulsions, limited to the paralyzed limbs. This indicates compression of the brain, perhaps by a fragment of bone, more frequently by effused blood. Of ten such cases, seven recovered, or a mortality of only 36 per cent. In such cases the operation should be performed at once.—*Gazette des Hôpitaux*, March 16, 1867.

ON THE DIAGNOSIS AND TREATMENT OF NASO-PHARYNGEAL POLYPI GROWING FROM THE BASILAR PROCESS.

UNDER the above head, M. Herrgott of Strasburg details a very interesting and well-managed case, with remarks; we have room only for a brief abstract:—

A farmer, æt. 24, was admitted to hospital in February 1865. For a year he had had difficulty of breathing. Six months before, he had large hæmorrhages from the nose, no cough, lungs quite sound. A month before admission, the bleeding had recurred. The patient was exceedingly anæmic. A tumour as large as a small hen's egg was found to hang down behind the soft palate, and was visible behind it to the extent of about $\frac{7}{10}$ths of an inch. The tumour was pyriform, its consistence uniform, and it felt elastic. The left nostril was completely obstructed; by a severe exertion the patient could inspire but could not expire through the right nostril, as the tumour acted as a valve. An examination by the laryngoscope was rendered easy by the docility of the patient and the lessened sensibility of the soft palate. It showed that the polypus had a pedicle as thick as the little finger, very short, and arising from the anterior portion of the basilar process at the left side. It was determined to put a ligature on the tumour. This was performed on the 16th February 1865 by means of a strong iron wire introduced through the left nostril, by means of Græfé's "*serre-nœud*." When it was felt that the ligature had encircled the tumour close to the base of the cranium, it was tightened. This produced considerable pain, but it did not last long. Lest the tumour should separate during sleep and choke the patient, a loop of silver wire was passed into it from the mouth, and secured to strong silk thread. On the evening of the fourth day the patient felt a curious sensation in his throat and nose, and pulling the thread he brought away the tumour by the mouth. At once he found he could breathe with ease, and had no further inconvenience.

There was nothing remarkable in the examination of the tumour, which seems to have been a true fibrous polypus. Five days afterwards, a laryngoscopic examination discovered a small red sore about the size of a threepenny-piece on the basilar process. He returned home, and frequently showed himself in a state of flourishing health.

However, next April (1866), he again returned with a similar tumour nearly as large as before. This was again removed as before with good success, but on this occasion M. Herrgott prepared a scraper, with which, introduced through the nostril, he was able, by the aid of the laryngoscope, thoroughly to remove all the fibrous and mucous structures from the anterior portion of the basilar process. The patient described the operation as exceedingly painful while it lasted. He rapidly recovered, and on 10th of December 1866, his general health was perfect, and no return of the disease had taken place.—*Gazette des Hôpitaux*, 28th February 1867.

DISLOCATION OF RADIUS AND ULNA FORWARDS.

A CASE of this exceedingly rare lesion lately occurred in the clinique of M. Maisonneuve, and is carefully detailed. No fracture of any of the bones of the elbow-joint was present; the patient was exceedingly thin, so that everything in the position, both of the bones and the muscles, could be most accurately determined; so that this case may fairly be added as a sixth authentic one to the five already collected by Hamilton, in his great work on fractures and dislocations. The symptoms were well-marked and complete. The dislocation was reduced, but in the end a considerable portion of the thin skin sloughed; the sloughs had separated, and the case was progressing favourably at the date of the report.

MEDIATE COMPRESSION AS A PROPHYLACTIC AGAINST INFLAMMATION AFTER WOUNDS OR OPERATIONS.

A MANUSCRIPT was lately read at one of the meetings of the Academy of Medicine by M. Milliot, a surgeon in the Russian army, on the above subject. By applying compression on the artery of the limb, it is expected that a wound or incision on the distal part of the limb will be less likely to inflame, and more likely to heal rapidly and with little suppuration. In a case of wound of the hand with amputation of the middle finger, accompanied by severe inflammation of both palm and back of the hand, under the care of M. Nélaton, this plan was pursued for six days, and on the seventh the wound was united "par première intention." So far the reporter regards the case as favourable to the method. —*Gazette des Hôpitaux*, March 9, 1867.

In the same number of the Gazette, there is a brief account of cases indicating the signal virtue of "nettle-tea," in considerable doses, in cases of hæmorrhage, especially epistaxis. The remedy is certainly cheap, plentiful, and probably innocuous.

Part Fifth.

MEDICAL NEWS.

THE INTERNATIONAL MEDICAL CONGRESS OF PARIS.

THE Congress will hold its meetings in the School of Medicine, the museums of which will remain open during the session. The first meeting will take place on the 16th of August next, at two o'clock. The morning sittings will occupy from two to six, and the evening meetings from eight to ten. The Congress will last two weeks, the meetings taking place every day, except Sundays.

The annual meeting of the Medical Faculty is fixed for the 14th August, when Professor Béhier will deliver a memorial oration on Rostan. All members of Congress will be admitted on presenting their cards of membership.

As we have already intimated, British medical men may obtain cards of membership, free of expense, by applying to any of the delegates. The delegates for Scotland are Professor Hughes Bennett and the Editor of this Journal.

Members wishing to read papers were required to send them either to one of the delegates or to Dr Jaccoud, No. 4 Rue Drouot, Paris, by the 25th July at the latest. Not more than twenty minutes shall be occupied by the reading of any paper, and the subjects may be either chosen by the authors themselves, or consist of one of the seven questions proposed by committee, which we previously enumerated (see numbers for June and November). A programme, containing excellent commentaries on these questions, will be given to members with their card of membership. The evening meetings will be devoted to the papers on subjects chosen by the authors themselves.

The French Northern and Eastern Railways have agreed to convey members at half-fare from and to the French frontiers. On the Northern Railway the reduction will be granted by special tickets, not transferable (bons nominatifs), which will be forwarded on application to members taking out their card of membership before 8th August. These tickets are available from the 10th to 15th August for the journey to Paris, and from 1st to 5th September for the return journey. On the Eastern Railway the reduction in price will last from 14th August to 1st September, and will be granted to members on presentation of their card of membership. These tickets on this line will not be available by the express or mail trains.

We need hardly repeat that we regard this Congress as a most important international movement for the promotion of medical science, and that we cordially wish it success.

DEATH OF PROFESSOR TROUSSEAU.

THIS distinguished physician died of cancer of the stomach, at Paris, on 23d June, at the age of sixty-six. In him the Medical School of Paris has lost one of its most brilliant Professors. Trousseau was the son of a schoolmaster, and commenced his medical studies at the Hospital of Tours under the celebrated Bretonneau, where Velpeau was his fellow-student. For some years subsequently he was house-surgeon in the Lunatic Asylum of Charenton, and is said to have been teacher of classics in a public school; but afterwards, devoting himself to medicine, he soon acquired distinction, and in 1840 was appointed to the chair of Therapeutics in the Ecole de Médecine in Paris.

The eloquence of his lectures rendered him an extremely popular professor. As an hospital physician, also, he attracted large numbers of students, and not a few foreigners, to his clinique at the Children's Hospital. He finally gave up the chair of Therapeutics for that of Clinical Medicine at the Hôtel Dieu; and he is probably best known in this country by his treatise on Clinical Medicine (Clinique de l'Hôtel Dieu), in which he has given the final results of his lengthened experience in hospital and private practice. Dr Bazire's excellent translation has already introduced part of this work to English readers. In conjunction with Dr Pidoux, Trousseau had also published a valuable treatise on Therapeutics and Materia Medica, besides various contributions to medical periodicals.

Trousseau was undoubtedly one of the most eloquent lecturers of the French school. In medicine, he was especially an eclectic, choosing from different systems what appeared most useful and sound, and adapting it to the requirements of practice. He was better acquainted with English authors and methods of treatment than most of his compatriots, and his writings have consequently received a ready and full appreciation in this country.

THE LATE SIR WILLIAM LAWRENCE, BART., SERJEANT-SURGEON TO THE QUEEN.

The death of this distinguished surgeon, at the advanced age of eighty-four, may be said to conclude an era in the history of English surgery, to which belong the celebrated names of Astley Cooper, Key, Travers, Brodie, etc. Lawrence was eminent as a writer and an orator as well as a surgeon. His sceptical and sarcastic tendencies not unfrequently aroused controversy and censure, and a want of consistency in his opinions when opposed to his interest, showed that he was deficient in the highest qualities of mind and character. But, on the other hand, few men have brought to the service of the profession a more acute, more powerful, or more cultivated intellect. For the last two years his strength had been declining, and about two months ago, he was suddenly attacked with hemiplegia of the *right* side and loss of speech (aphasia). Though unable to express his thoughts, his mind was unaffected, and he is said to have listened with apparent enjoyment to the conversation of his family and a few intimate friends till within a few hours of his death. He died on 5th July.

THE LATE DR HUIE, F.R.C.S.E.

We regret to record the death of Dr Huie, one of the senior Fellows of the Royal College of Surgeons of Edinburgh, on 12th July last. Dr Huie was born at Aberdeen on 16th August 1795, and was educated at the High School of Edinburgh. He was an apprentice to the late Dr Abercrombie, and studied medicine at the University of Edinburgh, where, in 1815, he received the degree of Doctor of Medicine, and the same year he took the diploma of the College of Surgeons. After spending some months in London visiting the larger hospitals, he commenced practice in Dundee; but, in 1822, he removed to Edinburgh, where he has since resided. He became a Fellow of the Royal College of Surgeons, and engaged in practice, which he continued till within a fortnight of his death,—at the same time taking an active part in the affairs of the College of Surgeons as a private member, an examiner, and at one time President. Dr Huie wrote little on professional subjects, but he was possessed of literary ability; and being deeply interested in the promotion of religion, he contributed various pieces, in prose and verse, to periodical literature, and in 1843 he published a volume of "Sacred Lyrics."

APPOINTMENT.

The Society of Practical Physicians of Prague have conferred the diploma of Foreign Associate on Dr Argyll Robertson, Assistant Ophthalmic Surgeon to the Royal Infirmary of Edinburgh.

GOODSIR FELLOWSHIP—SUBSCRIPTION LIST.

Dr Matthews Duncan,	£10	10	0
Dr Bree, Colchester,	1	1	0
Dr Balfour,	5	0	0
Professor Syme,	10	10	0
Dr Christison,	10	10	0
John Muir, LL.D.,	10	10	0
Dr Maclagan,	10	10	0
Dr W. T. Gairdner, Glasgow,	5	5	0
Dr Dunsmure,	3	3	0
Dr Graham Weir,	5	5	0
Benjamin Bell, Esq.,	5	5	0
Dr Handyside,	2	2	0
Dr Sanders,	2	2	0
Dr Smith,	3	3	0
Dr Warburton Begbie,	5	5	0
Royal Scottish Academy, per Sir George Harvey,	21	0	0
Dr Lyon Playfair, C.B.,	10	10	0
Sir J. Y. Simpson, Bart.,	10	10	0
Professor Turner, M.B.,	10	10	0
Dr Henderson,	5	5	0
Medical Faculty, M'Gill University, Montreal, per Dr G. Campbell,	10	10	0
David Smith, Esq.,	3	3	0
Dr Burt,	5	5	0
Dr Simson,	5	5	0
G. T. Chiene, Esq.,	10	10	0
Dr Chiene,	2	2	0
Dr Wyllie, Birmingham,	1	1	0
Dr Carruthers, Cramond,	1	1	0
Dr Joseph Bell,	2	2	0
Dr Craig Maclagan,	2	2	0
Dr Knight, Keswick,	1	1	0
Dr Cowie, Lerwick, Shetland,	1	0	0
Dr Lonsdale, Carlisle,	5	5	0
Dr J. T. Crichton, Arbroath,	£1	1	0
Professor Young, Glasgow,	2	2	0
Dr W. J. Marshall, Greenock,	2	0	0
Professor Humphry, Cambridge,	5	5	0
E. R. Bickersteth, Esq., Liverpool,	5	5	0
Dr T. Hardie, Leith,	1	1	0
Dr Angus Macdonald, Edinburgh,	1	1	0
W. Douglas Irvine, Esq. of Grangemuir,	5	5	0
Dr Soutar, Golspie,	2	2	0
Dr Andrew Key, Arbroath,	1	1	0
Dr Claud Muirhead, Edinburgh,	1	1	0
W. M'Cheyne, Esq.,	1	1	0
John Howkins, Esq., Granton,	2	2	0
Dr M'Dougall, Coldingham,	1	1	0
Dr Leadam, Iver, Uxbridge,	2	2	0
Dr Stanley Haynes, Salisbury,	1	1	0
Dr Willoughby Arding, Wallingford,	1	1	0
Dr John Lowe, Lynn,	1	1	0
Dr Dyce Duckworth, London,	2	2	0
Dr Cobbold,	1	1	0
Dr John M'Nab, Loch Inver,	2	2	0
Professor Allman,	5	0	0
Dr Adamson, Rye,	5	5	0
Dr Alex. Inglis, Worcester,	2	2	0
R. Davy, Esq.,	1	1	0
Dr Farquharson, Coldstream Guards,	1	1	0
James Mill, Esq., Thurso,	3	3	0
Dr Sutherland, Castletown, per do.,	2	2	0
John M'Kid, Esq., Ormlie, ,,	1	0	0
Dr Burn of Latheron, ,,	0	10	0
S. Grierson, Esq., Musselburgh,	2	2	0
Dr Alexander Simpson, Glasgow,	5	0	0
Dr Crum Brown, Rillbank Terrace,	3	3	0

From Indian Medical Gazette, 1*st June.*

Prof. Fayrer, M.D., Sen. Surgeon,	Rs. 50
Professor T. E. Charles, M.D.,	50
Dr Bryden, Statistical Officer,	32
Professor Phin Smith,	32
Professor Woodford, M.D.,	Rs. 32
Principal Joseph Ewart, M.D.,	50
Professor Colles,	50
Dr J. Anderson, Indian Museum,	50

PUBLICATIONS RECEIVED.

Braithwaite's Retrospect of Medicine,—Jan. to June 1867.

Dumreicher and Langenbeck,—Zur Lazarethfrage.

Wilson Fox, M.D.,—Diagnosis and Treatment of the Varieties of Dyspepsia. Lond., 1867.

N. Friedreich,—Krankheiten des Herzens. Erlangen, 1867.

G. Gaujot,—Arsenal de la Chirurgie Contemporaine. Vol. I. Paris, 1867.

Half-Yearly Abstract of the Medical Sciences,—Jan. to June 1867. London.

J. Saint-Lager, M.D.,—Études sur les Causes du Crétinisme. Paris, 1867.

E. Nicolas, M.D.,—De la Laryngite chronique. Marseilles, 1865.

E. Nicolas, M.D., — Translation of Morell M'Kenzie on the Laryngoscope. Paris, 1867.

A. P. Stewart, M.D., and E. Jenkins,—Medical and Legal Aspects of Sanitary Reform. London, 1867.

PERIODICALS RECEIVED.

Annales d'Oculistique,—May and June.

Berliner klin. Wochensch.,—Nos. 26 to 29.

Births, Deaths, and Marriages,—Return for June.

Brit. and For. Med. Chir. Review,—July.

Brit. Med. Jour.,—July 6 to 27.

Gazette des Hôpitaux,—Nos. 74 to 89.

Gaz. Hebd. de Médecine, etc.,—Nos. 26 to 29.

Gazette Médicale de Paris,—Nos. 26 to 29.

Glasgow Medical Journal,—July.

Journal de Médecine Mentale,—No. 7.

Journal of Cutaneous Medicine,—July 1867.

Journal of Mental Science,—July 1867.

Klin. Monatsbl. für Augenheilk.,—June.

Medical Press,—July 3 to 31.

Medical Times and Gazette,—July 6 to 27.

Medizinische Jahrbücher,—No. 3. Vienna, 1867.

Nederlandsch Tijdschrift voor Geneeskunde,—Nos. 3 to 22; Tweede Alfd., Eerste Afl.

New York Medical Journal,—May and June.

Rev. de Thérapeutique Médico-Chirurgicale,—Nos. 8 to 14.

Virchow's Archiv,—June.

Wochenblatt der Aerzte in Wien,—Nos. 17 to 22.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Graduation Address to the Gentlemen who obtained their Medical Degree, in the University of Edinburgh, on* 1*st August* 1867, *delivered by* PROFESSOR SYME, *Promotor.*

GENTLEMEN,—In accordance with an old usage of this University, I have now the privilege as Promotor of addressing to you a few words of congratulation and advice. Since the Latin language ceased to be employed on such occasions, it has become the custom to read long dissertations, which, however excellent in themselves, have had no special reference to the business concerned. But for my own part, I am not willing to lose this opportunity of saying something that may be of use to you in entering upon a new field of exertion. You came into this room as students, and are about to leave it as members of the medical profession. What has hitherto been the great object of your ambition is therefore now accomplished, and, knowing the long laborious course which has led to this result, I beg to offer my sincere congratulations.

The next object before you is to obtain success in your profession; and, with reference to this, I may offer some suggestions. In the first place, it will be proper to ascertain what is implied by your diploma beyond the title wich it confers. It professes to give you "*Potestatem amplissimam*" to practise your profession over all the world, but will hardly be found to do so. *Potestas* has two meanings; one being the power or ability to do a thing, and the other, legal authority for doing it. Now, that the latter meaning is not trustworthy may be ascertained by the simple experiment of crossing the Channel from Dover to Calais, and entering upon practice there, when it will be found that your *potestas* affords a poor protection against the penal clauses of French law; while, as to the other meaning, I need hardly say that no piece of parchment can convey the power of properly treating disease. The truth is, that this document gives you a legal title to practise your profession in all parts of Her Majesty's dominions, and testifies that the University of Edinburgh has qualified you for the practical study of your profession. We have taught you the structure of the human body, the uses of its various parts, the derangements to which they are liable, and the principles that guide the administration of remedial means. We have also shown you how to discriminate disease. But the whole of this instruction must be regarded as introductory to your own exertions in the practical study of medicine and surgery, which alone can qualify you for efficiently discharging the duties of your profession. You should lose no time in connecting yourselves with dispensaries or hospitals, or private practitioners as their assistants, so as to obtain opportunities of closely watching the progress of disease; and make every case a careful study, by discriminating its symtoms, investigating its history, and observing the effects of treatment. Proceeding thus, you will, step by step, gradually acquire the familiarity with morbid conditions that renders practice easy and safe. It has often been said, on high authority, that a healthy state of mind requires variety in the subjects of its exercise, and this may be very true in most circumstances; but for some years to come I am quite sure that nothing can tend so much to your success as concentration of thought on the cases of patients. You should think of them morning, noon, and night; and if you dream of them, it will be so much the better. Money-making ought hardly to be expected in the early part of your career, and would be no criterion of success, since, as in the case of thriving plants, it is of more consequence that the roots of your character should strike deep in public confidence, than that there should be a premature production of flower, or fruit.

Having now given my advice as to what you ought to do, I may next offer some suggestions as to what you should avoid doing; and here I would mention, in the first place, quarrelling with your brethren. It is said that our profession is quarrelsome; and no doubt it is so, which need not excite surprise when its peculiar circumstances are considered. The clergyman has his Confession of Faith and Articles of Belief, which, having been duly signed, it is his duty to teach without any alteration. The lawyer has his Acts of Parliament and his Records of Decisions, according to which he pleads the causes of his clients, and the judge decides them. But we have no such fixed rules of conduct, since the principles which guide our practice are left to our own free choice, and may be changed as often as we please. There hence ensues a great diversity of sentiment as to what is best for our patients, and the interest we feel in them is apt to intensify such differences of opinion into personal animosities, for which the ungrateful public, on whose account we quarrel, give us blame, instead of credit. Another source of dispeace is the want of harmony that too frequently exists between the senior and junior members of our profession. The older gentlemen, knowing the importance of a long and large experience, naturally regard the opinions of their younger brethren as of questionable value; while the newly-fledged doctor, issuing from his school with all the new nomenclature and theoretical improvements of modern science, does not always pay the respect which is due to age. There is thus a tendency to dogmatism on one side and presumption on the other, which may prove not only hurtful, but fatal to friendship. Being thus so much exposed to causes of estrangement, you should recollect that in the character of every man there is a mixture of good and evil—so that if you quarrel on account of the bad, you must lose the benefit of what is good. Instead, therefore, of resenting, or, still worse, retaliating, the offences of which there may seem reason to complain, you should bear them with a charitable and forgiving spirit, recollecting that, as you of course are no exceptions to the general rule, you cannot expect allowance to be made for your failings unless the same indulgence be extended to those of others.

The next error against which I have to warn you is getting into debt, which may seem hardly necessary, as everyone knows the impropriety and inconvenience of incurring pecuniary obligations beyond the power of liquidation. But as you may not be aware of the peculiarly disastrous effect which embarrassment of this kind has upon our calling, I think its baneful influence should be clearly explained. The practice of medicine and surgery, when properly exercised, may be truly styled a noble profession, worthy of the highest talents and most honourable disposition, but when pursued merely for the sake of gain, without the control of moral principle, is apt to degenerate into the lowest and basest of trades. Hence the quackery which, I regret to say, flourishes within as well as beyond the pale of the profession; hence the cunning tricks for inveigling patients into the meshes of scientific empiricism; and hence the dishonest practices, ostensibly for the benefit of patients, but really to put money into dirty pockets. Now, the great cause that leads to this perversion of faculties is the pressure of pecuniary difficulty, which, by destroying independence and self-respect, exposes to the influence of mean considerations, and renders all motives secondary to the acquisition of money. In the present upright and honourable condition of your minds, you perhaps feel surprise or even indignation at being supposed capable of such misconduct; but you may be assured that it is hardly possible for the strongest resolution to resist the blighting temptations of debt when the opportunities for following evil courses are so great as they are when presented by the confidence of patients in their medical attendants.

In conclusion, I beg to express my hope that you will never forget the solemn oath which has this day been taken, or the obligations imposed by it. You have sworn to practise your profession cautiously, chastely, and honourably; at all times doing everything in your power for the benefit of your patients, and never divulging their secrets which you have seen or heard, except under pressure of the most urgent necessity. Lastly, you have sworn that so long as the breath of life is drawn you will cherish a filial and affectionate regard towards this University. I trust you will always be inclined to maintain this feeling, and endeavour to show it by proving yourselves worthy of an institution from which there has emanated a long succession of men most eminently distinguished both at home and abroad. I have only further, on the part of my colleagues and myself, to express the sincere wish that all good things may attend your progress through life—and now bid you farewell.

ARTICLE II.—*On Sclerodermia and its relation to Elephantiasis Arabum.* By Dr VALD. RASMUSSEN, Prosector in Pathological Anatomy in Copenhagen. Translated from the *Hospitals-Tidende* for May and June 1867, by WILLIAM DANIEL MOORE, M.D., Dub. et Cantab., M.R.I.A.; Honorary Fellow of the Swedish Society of Physicians, of the Norwegian Medical Society, and of the Royal Medical Society of Copenhagen; Secretary for Sweden, Norway, and Denmark to the Epidemiological Society of London.

OUR knowledge of the disease of which I propose to treat in the following pages, and which, after Thirial, has been most commonly designated *Sclerema adultorum* or *Sclerodermia, Scleriasis*, dates chiefly from the last two decennial periods, although some observations are on record from a much earlier time. Thus, the first undoubted case was described by Curzio in 1755,[1] the second by Henke in 1809.[2] In 1837, Fantonetti described a case, and then several cases followed at short intervals from France: two by Thirial,[3] two by Forget of Strasbourg,[4] one of which was observed by Grisolle in the Hôpital St Antoine in Paris, one by Bouchut,[5] Putegnat,[6] Forget,[7] observed by Pelletier, two by Rilliet and Barthez.[8] In a Report of the Mineral Waters of Medevi, Eckström,[9] in 1849, quotes a case; and at last, in 1854, appeared the first large collection by Gilette,[10] consisting of twelve cases quoted from other writers, and two new cases carefully observed, one by himself, the other by Natalis Guillot. Hereupon followed, anew, cases by Fiedler,[1] Fuchs,[2] and Robert M'Donnell,[3] until, in 1861, Arning,[4] to a case of his own, appended a resumé and gave abstracts of the more certain cases previously known, in all eighteen. In his remarks upon a case of sclerema, Köbner,[5] in 1864, brought forward twenty-nine well established cases.[6] Subsequently the cases on record were increased by eight, namely, by Binz,[7] Wernicke,[8] Villemin,[9] Gamberini,[10] Auspitz,[11] Plu,[12] one each, by Mosler[13] two; two were overlooked by Köbner (Roger,[14] Grandidier[15]); so that the total number, with my case about to be given, at present amounts to forty.[16]

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[1] Two other cases from previous centuries, by Diemerbröck (Anatomes, lib. viii., cap. 1, p. 502), and Zacutus Lusitanus (De Praxi Med. Admir., lib. iii., p. 110), which are by Gintrac referred to sclerema, are described so briefly, and at the same time so indefinitely, that even if they really belong to the disease, they are valueless so far as our knowledge of sclerema is concerned. Thus, Z. Lusitanus mentions a woman in whom internal scirrhous ulcers were met with, and who had been suddenly attacked with hardening of the whole skin, so that the latter acquired the appearance of neat's leather or bark. On the employment of diaphoretics and baths the skin became softer, and she recovered completely.

[2] Handbuch f. Erkenntniss d. Kinderkrankheiten; Frank. a. M. 1821; p. 80.

[3] L'Union Méd., Dec. 1845.

[4] Gaz. de Strasbourg, No. 6, 1847. Schmidt's Jahrb., bd. 56, pp. 184, 185.

[5] Gaz. Méd., Sept. 1847.

[6] Journal de Médecine, Oct. 1847. Schmidt's Jahrb., bd. 62, p. 57.

[7] Journal de Méd., Feb. 1848. Schmidt's Jahrb., bd. 59, p. 184.

[8] Ibid.

[9] Hygiea, bd. 11, p. 45.

[10] Archives générales, 1854, p. 657.

Although this number is in itself not so very small, the disease has not as yet been made the subject of an exhaustive monographical essay. Though this may depend partly upon the fact, that the cases met with have been divided among so many hands, that only one observer (Mosler) has seen three cases, the cause is to be sought chiefly in this, that the disease is still in many respects so enigmatical, and requires to be cleared up in so many points, especially by anatomical investigations, that an adequate solution of this problem, and one in keeping with the state of science in the present day, is not to be anticipated, until the experience and knowledge of the disease already obtained are extended and controlled by fresh observations. As a contribution towards this object, I communicate the following case from the Municipal Hospital, which, besides being the first observed, or at all events described in Denmark,[1] has a particular claim on our attention, as it is in many respects peculiar and different from those hitherto recorded, and because the anatomical investigation has in this instance for the first time demonstrated the existence of conditions, which are of essential importance to our appreciation both of sclerema and of elephantiasis Arabum, a disease to which sclerema, as we shall hereafter see, stands in close relationship.

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[1] Deutsche Klinik, No. 34, 1855. Of the two cases, only one, however, ought to be looked upon as sclerema.

[2] Bericht üeber die med. Klinik z. Göttingen im Jahre 1853–54; Göttingen, 1855; p. 192.

[3] Reference in Canstatt's Jahresbericht, 1855, bd. 3, p. 360.

[4] Würzburger med. Zeitschrift, bd. 2, p. 186.

[5] Klinische und experimentelle Mittheilungen aus der Dermatologie und Syphilidologie; Erlangen, 1864; p. 33.

[6] Of these, five are overlooked by Arning (Bärmann, Fiedler, G. Jäger, Brück, Pierquin); six occurred subsequently (Förster, Nordt, Bazin, Köhler, Mosler, Köbner).

[7] Beobachtungen z. inneren Klinik; Bonn, 1864; p. 177. Schmidt's Jahrb., 1865, p. 45.

[8] Jenaische Zeitschrift f. Med. und Naturwissensch., 1864, p. 300.

[9] Gazette Hebdomadaire, 2d sér. 1, 45. Schmidt's Jahrb., 1865, p. 43.

[10] Journal de Bruxelles, Jan. 1864. Schmidt's Jahrb. ibid.

[11] Wiener med. Wochenschrift, xiv. 47–50, 1863.

[12] Gaz. d. Hôp. No. 77, 1866.

[13] Virchow's Archiv, 1865, p. 321.

[14] L'Union Méd. No. 97, 1860.

[15] Bad. Nenndorf bei Hautkrankh. Allgem. med. Centralzeitung, 1863, p. 30. (Imperfectly reported.)

[16] Among these are not included a few cases which, nevertheless, may undoubtedly be referred to the disease, namely, two by Alibert, which are not mentioned by earlier writers, and are by him referred to his fourth form of cutaneous cancer, *Carcine éburnée* (Clinique de l'Hôpital Saint-Louis, ou Traité complet des Maladies de la Peau, par J.-L. Alibert, Paris, 1833, fol. p. 201); these will, however, be mentioned in another place. Auspitz (l. c.) quotes from Joseph Frank (Die Hautkrankh., ein Handbuch für Lernende, Leipz. 1848, bd. iii., p. 409) cases of this nature by Helvetius, Stolpertus, Strambio, Jaeger, Thauleau, Tourneux, and Kramer. Frank himself adds that the skin in man at any age may become hard in consequence of erysipelas, spedalsked, diarrhœa, or of other not yet sufficiently known causes. The sources of information quoted have not been accessible to me, so that I am unable to decide whether these cases may properly be referred to sclerema.

Sclerodermia mammarum, pectoris et brachii dextri; Pleuritis hæmorrhagica dextra cum compressione pulmonis; Tumores adenoidei pleurarum, diaphragmatis et hepatis; Cyanosis renum.

Margrethe Steffens, aged 46, married, admitted on the 28th September 1866 into the Surgical Division of the Municipal Hospital. She is of healthy parentage, and is said to have always enjoyed good health. She has never had a child, and menstruation has always been regular, until it ceased some months ago. About twenty-one months since, she observed that a number of small knobs had formed in the right breast, which in her work was much exposed to pressure, and gradually coalesced to a hard mass. At the same time the breast contracted to the size and form it at present has. There has never been any pain in the breast. About the same time she suffered from violent rheumatic pains in the right arm, without these exhibiting any definite type.

In the end of October 1865, the patient was attacked, without any assignable cause, with fever and pain in the right arm, where erysipelatous swelling and redness set in, extending, in the course of the following days, over the whole arm and down upon the trunk. The arm was swollen to double its size; the skin was red and tense, with the formation of bullæ. During her stay in hospital her general state was rather unfavourable; she had high fever, almost of a typhous character. The erysipelatous redness extended gradually over the left breast and a great part of the arm. It was combined with the formation of sudamina and with copious perspiration. An abscess formed in the right axillary region, and subsequently, after previous formation of bullæ on the left foot, a collection of pus took place in the calf of the left leg, which, on incision, gave issue to a copious purulent discharge, whereupon the swelling in the extremities subsided, and the patient was dismissed cured in the beginning of January.

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[1] In Danish literature, sclerema is mentioned only in a quotation from Arning and Auspitz in the Ugeskrift for Læger, 2 R., bd. xli., 1867, No. 7, p. 89; and in the Hospitals-Tidende, Jan. 1862.

Shortly after her dismissal, the swelling in the right arm began again to form, but without febrile symptoms or pain. It seems to have extended from the mamma over towards the shoulder and thence down towards the hand, which first, within the last few weeks, has become thick and swollen. At the same time it has extended over the whole anterior and lateral surface of the right breast, over the scapular region, upon the middle of the neck, crossing the middle line of the body over to the left breast. Her general health has always been good since her dismissal from hospital.

She is now well, complains of no pain anywhere. All her functions are regular. She states that she frequently suffers from copious perspiration in the affected part.

On examination, the skin over the whole anterior surface of the right breast, and thence extending over to the left side, where the right half of the left mamma is attacked, is seen to be the seat of a considerable hardness; this is most strongly marked on the right mamma and the skin surrounding it, both upwards towards the clavicle and downwards towards the margin of the ribs. The hardness is very considerable, and the skin is strongly adherent to the subjacent parts. There is no swelling, but a considerable retraction of the subcutaneous connective tissue. The colour of the skin on the right side of the breast, and especially on the mamma itself is brownish; on the left side it is, on the contrary, streaked with red. The skin has at the same time here and there deep immovable folds, much like those on the skin of the rhinoceros. The hardness is less on the left side, and in that situation there is rather some swelling of the subcutaneous connective tissue. The hardness terminates in a sharp irregular boundary which passes from the left sterno-clavicular articulation, down along the outer margin of the left mamma, and thence obliquely down towards the false ribs on the right side. Everywhere on the boundary the induration appears to consist of knots, as large as peas, in the subcutaneous connective tissue, which coalesce internally towards the indurated parts. The right mamma is reduced to the state of a small tubercule of bony hardness, in the centre of which the nipple is seen as a hard mulberry-like body. The left breast is of about the natural size, the hardness being most considerable on its right half; the nipple is less than the left, but equally hard and retracted into the tumour. The hardness extends further over the whole right lateral surface of the neck, where the knots mentioned are very prominent, down over the scapular, axillary, and right lateral regions, but it is here less, and is lost uniformly in the healthy skin. By reason of the retraction of the skin, the head is held slightly bent over towards the right side, and the movements of the thorax are somewhat impeded. The whole of the right upper extremity is swollen to about double its normal size. The swelling is most strongly marked on the shoulder and humerus, less so on the forearm, and only slightly so on the hand and fingers. The skin, except in the deep furrows formed by the flexures of the joints, in which it is of relatively normal consistence, is everywhere extremely hard and swollen, and so closely connected with the subcutaneous connective tissue, that it cannot be lifted into a fold. It is of normal colour, not tender, only sparingly covered with slender hairs, which last even have completely disappeared in the right axilla. The orifices of the sudoriparous and sebaceous follicles are more remote from each other than usual on account of the great extension of the skin, their outer openings are widened, the sensibility is everywhere normal. Wagner's tactile regions are unaltered. The temperature is normal.

Measurement:—

Around the wrist,	on the right side, .	12″;	on the left,	7″
Immediately beneath the elbow,	„ .	15½″	„ „	9″
In the middle of the humerus,	„ .	18½″	„ „	10½″
Close beneath the axilla	. . .	20″	„ „	11″

Movement in the elbow-joint much obstructed by the swelling. The left arm is normal. No albumen in the urine. P. 68. To have a mixture of iodide of potassium. A tepid bath every second day.

14*th October.*—The swelling in the arm is perceptibly diminished under the use of the baths.

18*th.*—On account of some cough and stitch in the left side, where nothing wrong is found on stethoscopic examination, the baths have been, during the last few days, discontinued. The swelling in the arm has attained its former size.

22*d.*—The stitch in the left side disappeared a couple of days ago, but the patient has now got a stitch in the right side, with dyspnœa. P. 88.

To discontinue the iodide of potassium, and to be cupped, with scarification.

Pleuritis of the right side now set in, with considerable dyspnœa and cough, with bronchial expectoration, but little or no fever. The subjective symptoms diminished towards the end of the month, although the extensive dulness on percussion and feebleness of respiration remained unaltered. Towards the middle of November the patient began to get up, and on the 21st was transferred to the fourth division (for diseases of the skin).

In the course of a couple of days, however, her condition became much worse; her breathing was extremely oppressed, so that she was obliged to sit upright in the bed, and, with increasing cyanosis, death occurred at four in the morning of the 27th November.

Dissection thirty-four Hours after Death.—Cadaveric rigidity gone; body in good condition. The whole of the right breast is as flat as in a man, the strongly projecting nipple being drawn over towards the axilla; the left breast is of the usual size, situated about in the median line. The entire of the right arm and shoulder is greatly swollen; the skin is everywhere of the natural colour and appearance. On the breast, the skin and the subjacent tissue are extremely firm, as hard as wood; on the right side, the former is of a striking brownish colour; on the arm they are somewhat softer, so that the finger leaves a slight impression, particularly on the hand.

On cutting through the right mamma, and in its immediate vicinity, the skin and the subjacent tissue are found, from the epidermis (which is of natural thickness, and on the surface of section does not curl inwards), and in to the ribs, to be changed into a dense fibrous, whitish substance, of tolerably uniform appearance, and particularly without any perceptible difference between the corium and subcutaneous tissue, only some small reddish yellow acini of fatty tissue remaining. The whole sclerotic mass has a thickness of about four centimètres (rather more than one inch and a half). The pectoral muscles are free, as are the intercostals, but the connective-tissue-like thickness extends in many places as far as the periosteum of the ribs, with which it stands in direct connexion. In the most affected part, however, corresponding to the third and fourth ribs, the intercostal muscles seem to have wholly disappeared in the fibrous mass, but above and beneath this place they are everywhere perceptible. The right mammary gland appears only as a somewhat greater quantity of fatty acini; of the glandular substance itself not a trace is met with. The nipple is almost the size of a small walnut, of mulberry-like appearance, and on the surface of section consists of a similar fibrous mass.

In the left breast, the place of the gland itself is occupied by a dense tendinous tissue, in which only here and there small reddish yellow points (fat) occur. The sclerotic skin over it has on the right side a thickness of six millimètres (·23622″), but diminishes on the left of the nipple gradually to two mm. Beneath the condensed tissue a large quantity of whitish yellow fat is met with.

The sclerotic change of the skin extends, moreover, through the space previously described, and is lost on the whole uniformly in the sound skin; superiorly there are found, especially on the right side of the neck, some tubercles as large as nuts, lying free in the otherwise natural subcutaneous connective tissue; they seem on the surface of section to consist of a dense fibrous mass.

On cutting through the integuments of the arm a quantity of serous fluid exudes, and can be expressed. The thickened parts of the skin measure—on the shoulder, over the deltoid, nearly 8 mm. (·31496″); in the middle of the arm, 6 mm. (·23622″); at the wrist, 3 mm. (·11811″); whence the skin passes over the back of the hand gradually into its normal thickness on the fingers, which only are very easily flexed. The epidermis itself is there, as well as elsewhere, of the natural appearance and thickness; it curls also on the surface of section very slightly inwards. Everywhere under the thickened skin, abundant fatty tissue occurs. The muscles are rather pale and moist, but otherwise of natural appearance.

The heart is flaccid, contains a quantity of fluid blood and soft fibrinous coagula; the flesh of the heart is pale, opaque, with a distinctly yellowish tint. In the right pleura are about four quarts of thin, highly blood-coloured fluid; the lung is strongly compressed, pushed upwards and inwards towards the spinal column, and is not too large to be easily grasped in the hand. The pulmonary pleura is on the whole rather thickened, opaque, and in some places, especially in the circumscribing margin, are found small whitish or rather greyish transparent tubercles, varying from the size of millet-seeds to nearly that of peas, and extending upwards over the pleura. The pulmonary tissue itself is perfectly void of air, pale, and tough. The pleura costalis is throughout much thickened, especially where it corresponds to the region of the third and fourth ribs, and it is there in direct connexion with the external formation of connective tissue. In addition to this diffuse thickening, there are found on the boundaries, superiorly and inferiorly, small whitish tubercles of the size of hemp-seed, or nearly as large as peas, and of a dense fibrous consistence. Similar tubercles are met with on the diaphragm.

The left lung is of the natural size; on both pleural laminæ are found thickenings of connective tissue like those on the right side, in this situation most frequently forming whitish, irregular or retiform, flat elevations; here too the larger and smaller miliary tubercles are met with more sparingly. The pulmonary tissue itself is everywhere permeable to air, not œdematous. The bronchial glands are not swollen.

The spleen is large, almost double its usual size; its parenchyma is of a dark red colour and firm; the trabeculæ and follicles are abundant.

The liver is of the usual size; its parenchyma is rather reddish, especially in the midst of the acini. The quantity of fat is only small. In the left lobe, close to its anterior margin, is found a whitish, slightly elevated round spot, of about ¾ centimètre (·295281″) in diameter, over which the otherwise normal capsule is slightly thickened; on section it appears to correspond to a sharply defined, firm, whitish tubercle, of the size of a nut, in the hepatic tissue. No others of the same kind are present. In the gall-bladder is a small quantity of thin, yellowish bile.

The mesenteric glands are slightly swollen.

The stomach and intestinal canal present nothing abnormal, only slight swelling of solitary follicles in the lower part of the small intestine.

The kidneys are highly cyanotic; the parenchyma exhibits only slight opacity of the convoluted tubes of the cortical substance.

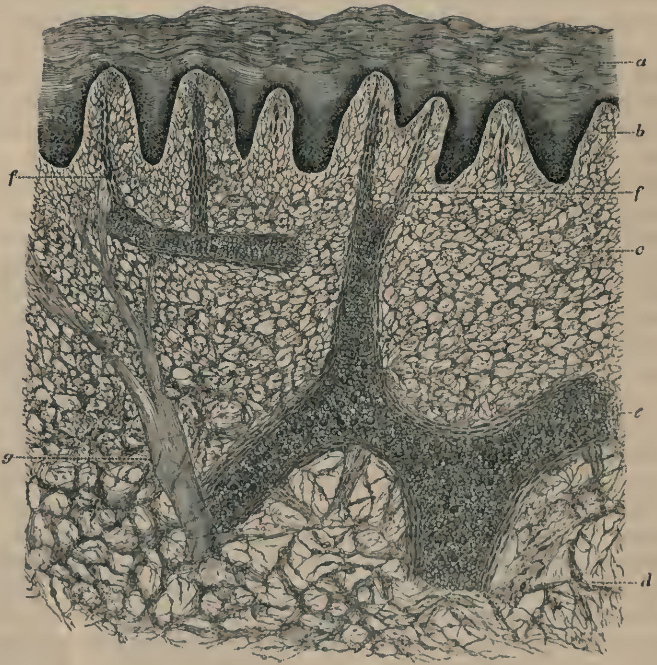
Histological Investigation.—On cutting through the skin of the arm, the epidermis is seen of the ordinary thickness; in the cells of the rete lying nearest to the papillæ is some deposition of pigment. The papillæ are of the normal size and form; the corium is rather broader than usual, with tolerably abundant fine elastic filaments. The meshes in the subcutaneous connective tissue are diminished in extent, especially in the superior layer, whose interior is here devoid of fat, traversed by a fine network of filaments of connective tissue, which are considerably larger than is normally the case; the network is here and there studded with spindle-shaped or roundish cells and nuclei. The interspaces between the large meshes are likewise considerably increased in extent. What here, however, most strikes the eye is a considerable development of cell-broods around the vessels in the skin and the subcutaneous connective tissue, so that the latter are, as it were, surrounded with sheaths. These are formed exclusively of closely impacted cells, which partly, and indeed predominatingly, present the well-known appearance of lymph cells; partly are smaller, nuclei-like, shining or uncharacteristic, indifferent cells. The most peripheral cells in these adenoid vascular sheaths are more oblong, the outermost being spindle-shaped, removed from one another and separated by a homogeneous or weakly fibrillar intervening substance, soluble in acetic acid. The sheaths completely cover the vessel itself, and are not removable by brushing; on transverse section they often appear two or three times thicker than the vessels themselves, which, in the rare cases in which they became visible, appeared to be small arteries. In the transition to the capillaries, and especially at the passage of the latter to the papillæ, the cells diminish in number; and in the capillaries themselves only an abundant development of the nuclei of the latter is seen. On account of the large number of cells, the place and mode of their development were difficult to observe; but views were obtained, which left scarcely any doubt that the adventitious cells were the proper foci of the cell formation.

This development of adenoid sheaths around the vessels is so constant and abundant, that it is not absent in a single section from the arm; and it extends in depth down to the place where the subcutaneous fatty tissue occurs in ordinary quantity—that is, as far as the peculiar sclerosis of the skin, but so that an uniform transition to the normal condition takes place.

Sections from the right and left mammæ present essentially the same changes as those from the arm, yet a difference prevails,—least between the arm and the left mamma, greatest between the former and the highly atrophic and hard right mamma. In this and the adjoining highly sclerotic parts, the boundary between the corium and the subcutaneous connective tissue is absent; the whole forming a tolerably uniform mass of connective tissue, with exceedingly abundant elastic filaments, finer in the corium, coarser in the depth, everywhere forming dense networks, which are met with also in the papillæ. The sheaths around the vessels are slight, in many sections they are not seen at all; the cells themselves are for the most part small, not characteristic, and present only in small number; the papillæ are almost all devoid of vascular loops.

Of the glandular substance, there are found in both mammæ only slight remains of slender lacteal ducts, scattered in the sclerotic connective tissue, and containing granular detritus.

The nerves are abundantly present throughout the hardened parts; they are visible unchanged in both longitudinal and transverse sections. I did not succeed in tracing them farther than to the base of the papillæ. The sudoriparous ducts, the hair and fat-follicles exhibit no essential alteration; the first are here and there surrounded by sheaths of fibrillar connective tissue, and are usually accompanied by vessels.



SECTION FROM THE ARM.

a. Epidermis. *b.* Papillæ. *c.* Corium. *d.* Subcutaneous connective tissue with nuclei in the larger fasciculi. *e.* Vessels with lymphoid sheaths and peripheral formation of connective tissue. *f.* Capillaries. *g.* Nerve.

The tubercles and prominences described in the pleura, diaphragm, and liver, consist of numerous small, granular (lymphoid) cells, impacted in a homogeneous intervening substance, from which they cannot be brushed out; they are present in variable quantity, occurring in some parts only sparsely, while in others they are closely heaped together. Their relation to the vessels, as in the skin, is nowhere demonstrable; the vessels are in general not perceptible. On the contrary, the lymphoid cells are seen in many places to arise from the division of the connective-tissue cells, and this not merely in the periphery of the tubercles, but also in many points within these, where connective tissue with spindle-shaped and stellated cells is not unfrequently met with.

The other fatal cases which have been anatomically investigated, are limited to five; they are those of Förster, Köhler, Gintrac, Auspitz, and Arning.[1]

In Förster's case the patient died of pulmonary phthisis. The body was extremely emaciated. The sclerosis was found in the upper part of the chest, the abdomen, and the anterior surfaces of both upper and lower extremities. The altered parts of the skin were yellowish or brownish, extremely hard, not removable, and as difficult to cut through as sole-leather. On the surface of section, at the first glance, all difference between the corium and the subcutaneous tissue seemed to be removed, only a homogeneous, white, smooth, shining surface being visible; on closer examination, however, a superior, more uniform layer, was distinguishable from an inferior one of more meshy structure. More accurate investigation showed that the corium was somewhat thickened and hardened by hypertrophy of its normal connective tissue, but that the subcutaneous membrane had by no means disappeared, but was, on the contrary, altered to a corium-like, firm, and uniform layer. This change had been effected by the total disappearance of the fat from the meshes of the connective tissue, so that under the microscope only some series of fat-cells were here and there visible; the walls of the meshes themselves were greatly increased by thickening and further development of their fasciculi; and as, at the same time, the fine filaments normally bearing fat-cells were likewise hypertrophied, the loose, meshy connective tissue was changed to a firm, compact mass. The elastic filaments in the skin and in the subcutaneous connective tissue were seen likewise to have taken part in the process, as they were met with in the same quantity as in the normal state, which could not be the case if the connective tissue alone was hypertrophied. The papillæ of the corium, the cutaneous glands, and the hair were unaltered; but the scanty distribution of the last was striking. The capillary vessels were fewer than usual, but were otherwise unaltered. The nerves were scarcely visible, as they were evidently covered by the increased connective tissue. With the subjacent muscles, fasciæ, and tendons, the sclerotic tissue was closely connected.

With respect to the anatomical changes, Köhler's case agrees with Förster's; the sclerosis was most strongly marked in the deepest layer of the subcutaneous connective tissue; this, with the corium, formed a firm, shining tendinous tissue. The microscopical examination exhibited very little fat, and an exceedingly great increase and thickening of the subcutaneous bundles of connective tissue, without diminution of the elastic filaments, and without increase of the capillaries.

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[1] Loc. cit.

Gintrac, with whose case I am acquainted only from the report in Schmidt's Jahrbücher, gives no information worth reproducing.

Auspitz's patient died of Bright's disease (granular atrophy of the kidneys), which was supposed to have commenced after the affection of the skin. The latter was very extensive, but not very intense. The corium appeared in many places, even to the naked eye, denser and firmer, and under the microscope a remarkably great development of bundles of connective tissue was observed; true elastic filaments were, moreover, present in great quantity. The subcutaneous connective tissue was also moderately hypertrophied, and the fat was present in rather smaller quantity than natural. The vascular loops in the papillæ were capable of being injected. The rete Malpighii was extremely highly coloured, as in the negro, and the pigment was found also in the epithelium of the sudoriparous and adipose follicles, and in the outer envelope of the hair. In the cutaneous vessels, as far as the middle of the corium, pigment granules were met with impacted in the walls or in the adjoining connective tissue. The cutaneous glands were normal.

In Arning's case, the thickening was confined to the corium, while the subcutaneous connective tissue was, on the contrary, completely intact. On microscopical examination, an enormous development of the elastic tissue was found to be the only essential change in all the affected parts. The papillæ, as well as their capillary loops, were normal; the tactile bodies were also often demonstrable, and presented the usual appearance. Close under the papillæ occurred dense networks of elastic filaments, which more deeply increased in extent; in the superior layers they were more perpendicular, in the deeper they were more horizontal. The thickness and closeness of the filaments varied with the degree of the sclerosis; in the most affected parts (plica cubiti) they resembled the dense elastic networks of the larger arteries. The glands and hair were unchanged; around the sudoriparous glands only was there some increase of connective tissue. Similar development of elastic tissue was met with also in the affected parts of the mucous membranes (the uvula and the posterior and lateral walls of the pharynx), lying close beneath the epithelium, and extending in as far as the muscles, but not into the latter. In the face and on the neck the subcutaneous connective tissue had coalesced with the superficial fasciæ, forming a cicatrix-like mass, which extended to the bone. It consisted of connective tissue, in whose meshes, however, fat was still found; and here also there was an exceedingly abundant development of elastic filaments in the cutis.

I now leave these apparently contradictory anatomical investigations, proposing to return to them when I come to state my views as to the nature of the disease.

Symptomatology.—Were we, with the foregoing case in view, to give a sketch of the disease in a symptomatological respect, it would assume a quite different aspect from that hitherto given by writers. Thus, it appears to me, too much stress has been laid upon the sclerosis, the hardening, which certainly is what most strikes both the patient and the observer, but which, nevertheless, is only the final stage of the disease; and the sclerema has thus come to stand alone, as something enigmatical and strange. But if we look through the, as we have seen, already tolerably numerous cases, we shall find a series of observations, with which our own coincides, where the disease has from the commencement set in with more or less well-marked irritative conditions, strikingly resembling, as we shall hereafter see, those occurring in the commencement of elephantiasis Arabum.

I therefore believe that we may properly divide the disease into two stages, by no means, however, accurately defined, of which the first is characterised by infiltration (lymphatic œdema, Virchow) in the skin and the subcutaneous connective tissue, with the formation of lymphoid cells in the surroundings of the vessels; the second, by the proper sclerosis from the development of connective tissue from these cells.

Stage of Infiltration.—There are only few cases in which this stage has been so characteristically defined as in ours; for that we have the same process before us in the highly swollen arm and the mamma of bony hardness, is sufficiently evident from the anatomical investigation. But this stage is well marked in a not very small number of earlier observations, of which I have altogether met with ten. In some instances the disease begins, like elephantiasis, as erysipelas, with swelling, redness, pricking pain, and a feeling of stiffness in the affected part, sometimes with the formation of bullæ (Wernicke, author). The redness and swelling may disappear and give place to the usual desquamation, or the disease may pass into a more chronic form, where the redness gradually becomes darker and the infiltration harder (Grisolle, Villemin). But even if the erysipelas entirely disappears, it is apt to return, and then leaves behind it, after the superficial redness has vanished, permanent swelling of the cutis and subcutaneous connective tissue (our case). At the same time the general health is affected, and, as it would seem, in proportion to the intensity of the erysipelas, yet it must be considered exceptional when the fever, as in our case, attains a considerable degree; at all events, it is only transitory, so that the disease in the whole of its subsequent course, even if there be a relapse of the erysipelas, continues apyrexial.

In some other cases the erysipelatous symptoms are less prominent. There is swelling, with slight redness of the skin, and a pricking sensation; the skin becomes tense, shining, parchment-like, is incapable of being lifted into folds, or this can only with difficulty be done, and it retains for a long time the pressure of the finger (Binz, Wernicke, Mosler; see the subjoined 8th case).

The affection spreads further, either steadily progressing, until it has attained a certain extent and remains stationary, or occurring simultaneously or at intervals, and without any assignable cause, in scattered points, often confined to very small portions of the skin. Again, in other cases, the redness may be so inconsiderable that it is quite overlooked, or it may be entirely absent, and there remains only a more or less well-marked swelling (infiltration) of the skin, which may even be so considerable that the affected part may acquire the appearance of being the seat of a simple œdema, and the tension may be so great that small fissures, with consecutive ulceration, may take place, as in Mosler's case (see the 7th case subjoined) and Plu's. That, moreover, this infiltration, so characteristic, according to my view, of the disease, might be wanting, seems to follow undoubtedly from a great number of well-observed cases; but in reference to this point, it must be remarked, that a slight swelling is easily overlooked by the patient, who most frequently does not apply to the physician until decided hardness has set in. Even in Arning's case, so carefully and accurately observed, we shall find that such a swelling was present, although no importance whatever was attached to it by him; nor does he mention it in the general description of the symptomatology of the disease. Thus there was found in the commencement a swelling of the neck perceptible to the patient himself, as well as transient œdema in the affected part, especially the arm and face. Even if there be not any perceptible increase of volume of the affected part, the characteristic hardness, which in some cases occurs suddenly, must certainly be ascribed to a moderate infiltration of the skin and subcutaneous connective tissue; for it is too much at variance with the histological development of the affection to assume the existence of a sudden hyperplasia of the connective tissue, in which the essential character of the disease has hitherto been placed.

We thus see a uniform transition from the most fully marked erysipelatous conditions, with considerable swelling and lymphatic œdema, to those where the skin preserves its natural colour, and a scarcely perceptible infiltration is present. The latter coincide with the more chronic form of the disease, while the former constitute its more acute variety. Indeed, the different forms of the disease may present themselves in one and the same patient, as in my case. In it the affection of the arm had been developed after the second attack of an intense erysipelas with considerable swelling and infiltration, which continued without apparent change until death. On the left breast there was only very slight redness and swelling, while the disease in the right had become developed without perceptible redness or swelling, and had gradually assumed the hardness characteristic of it, but with the deviation from the cases hitherto described, with the exception of Plu's, that small tubercles were developed in the subcutaneous connective tissue, which gradually coalesced to a compact and uniform swelling; yet, anatomical examination demonstrated the same process in each of the three parts, differing only with respect to the intensity and the stage to which it had attained.

In none of the cases described was any cord-like swelling of the lymphatics met with, and only in one was a considerable swelling of the lymphatic glands observed in the affected part (Wernicke). In my case, on the first attack of erysipelas in the arm, a gland suppurated in the axilla.

In consequence of the defective nature of our data, it is difficult to determine the duration of this stage. In Binz's case, it lasted two months, the whole disease running its course in four; in Mosler's (see case 8), it lasted four months. Gradually, as the swelling diminishes, the disease passes over into the second stage, sclerosis.

I here introduce the ten cases in which this stage has been well marked, and the more so as the materials have not before been worked up from this point of view, and they are nowhere else to be found collected.

[The author quotes the cases referred to at considerable length, but the great extent to which his paper runs will oblige me to content myself with giving the reference to each. The reader, who may feel more particularly interested in the subject, will thus be enabled to consult the original sources of information.—*Translator.*]

1st Case. (Grisolle, quoted by Forget.) Gazette de Strasbourg, No. 6, 1847. Schmidt's Jahrb., bd. 56, pp. 184, 185.

2d Case. (Eckström.) Hygiea, bd. 11, 1849, p. 45.

3d Case. (Natalis Guillot, quoted by Gilette.) Archives générales de Médecine, 1854, p. 660.

4th Case. (Villemin.) Gazette Hebdomadaire, 2d series, 1, 45, 1864. Schmidt's Jahrb., 1865, p. 43.

5th Case. (Binz.) Beobachtungen z. inneren Klinik; Bonn, 1864; p. 177. Schmidt's Jahrb., 1865, p. 45.

6th Case. (Wernicke.) Jenaische Zeitschrift f. Med. u. Naturwissensch., 1, 3, p. 300, 1864.

7th Case. (Mosler.) Virchow's Archiv, 1861, p. 167.

8th Case. (Mosler.) Ibid., 1865, p. 321.

9th Case. (Mosler.) Ibid.

10th Case. (Dr Plu.) Gazette d. Hôp., No. 77, 3d July 1866.

(*To be continued.*)

ARTICLE III.—*The Prevalence of Bronchitis in England, and its Causes.* By CHARLES PARSONS, M.D. Edin., late House Surgeon to North Staffordshire Infirmary, and formerly House Physician and Assist. House Surgeon, King's Coll. Hosp.

BRONCHITIS is a disease with which we are all, as medical practitioners, most familiar. Few maladies are so prevalent, and still fewer so fatal, as the tables which follow amply prove; and yet no disease yields more readily to remedies when promptly and judiciously applied in its early stages, or more completely baffles our skill when complications arise, which persistently defy every kind of treatment which science suggests or ingenuity can devise. The number of people in England who have not suffered from this complaint at some period or other of their lives is comparatively small. This may seem a startling announcement; but when it is remembered that, from the simple "cold on the chest" to the fatal capillary bronchitis, there are many intermediate forms of greater or less severity which are very common, such as the "winter cough" so prevalent in middle and old age, the apparent exaggeration is explained.

It will be evident, from the statistics I have collected, that the deaths from bronchitis have steadily increased year by year for the past ten years. I shall recur to this subject again presently, but I would observe in passing, that the accuracy with which the causes of death are certified now-a-days may have contributed in some measure to this result. For many years numerous cases of fatal capillary bronchitis, especially amongst children, were regarded as pneumonia even by well-educated men, and were so returned in the Registrar-General's Reports; but, with increased attention to clinical medicine and pathology, a greater accuracy of diagnosis has been attained, and these "returns" have become valuable statistical records, conveying information on public health of the utmost importance to us as medical practitioners. Any change in the nomenclature of disease must of necessity affect the value of these "returns," and is therefore to be deprecated. And yet, in a recent volume of clinical lectures, it has been proposed to abandon the name of bronchitis as a distinctive disease, and to return to the old term "catarrh" of Laennec, and call "capillary bronchitis" "suffocative or capillary catarrh." But surely it is better to retain bronchitis as a generic term for all inflammatory affections of the bronchial tubes, and to regard the various forms of catarrh as so many different species of this, modified in a variety of ways by the constitutional habit or tendency of the patient, the severity of the attack, the extent of bronchial surface implicated, and the season of the year.

If any one has any doubt at all as to the prevalence of bronchitis in the kingdom, let him, any Sunday in the winter—the colder and moister the better—visit some well-filled church or other, and during the sermon let his attention be devoted to the congregation, and he will probably be amazed at the perfect volley of coughing which meets his ear from time to time when the preacher pauses; whilst a dropping fire here and there is kept up continuously by the individual members of the assembly. There will be every variety of cough probably,—from that of common catarrh down to the wheezing, suffocating cough of permanent, old-established bronchitis and asthma. With a little practice, not only can the age and sex of the cougher be diagnosed with tolerable accuracy, but also the affection of the chest whence the cough originates. Then let him peruse the reports on "public health" from week to week as they appear in the *Times* newspaper, and the mortality by bronchitis will nearly always be found during the winter months to be at the head of the list,—of course, excepting those seasons when epidemics prevail. Indeed, speaking generally, it may be safely asserted that the most fatal disease in England at the present moment, next to phthisis, is bronchitis, and it is high time that the causes of this fatality should be investigated.

When the death-rate in any of our manufacturing districts continues year by year to mount higher and higher, what do we do? Why, we send down a Commission of Inquiry to report on the subject, and then we proceed to limit the mortality by legislative interference, not so much from benevolent motives, I fear, as from an apprehension that the increasing drain upon the population might at length assume political importance. It would not be possible to adopt a similar line of conduct in the present instance, inasmuch as the disease is not confined to a district of limited extent, but prevails throughout the length and breadth of the land. Still, much may be done, if every medical man would endeavour to trace each case of bronchitis occurring in his practice to its origin, and record the results of his inquiries from time to time in the medical journals. In this way a mass of facts would accumulate which would enable us the more successfully to combat the disease, not only by suggesting sounder preventive measures, but also by affording reliable data upon which to ground a more scientific treatment.

For a long time phthisis was held to be an incurable disease, —no one attempted to ward off the death believed to be inevitable, and the poor victims drifted helplessly to the grave. Then came a reaction, and the profession was aroused to an investigation of the subject; but a glimpse only of the truth was obtained when an early change of climate was adopted as the only hope of prolonging life; for subsequent inquiry proved that more depended on the *kind* of climate selected than on the mere *change*. Then a belief in diet and regimen, and well-regulated exercise, for those predisposed and the already affected, gradually gained ground in the professional mind, and led the way to the adoption of a more successful, because more rational, method of treatment. And what is the result? Let the following tables speak for themselves; they are compiled from the Registrar-General's Annual Reports:—

TABLE A.—*Phthisis in England.*

1854.	Males, . . .	24,206	1859.	Males, . . .	23,534
	Females, . .	27,078		Females, . .	26,615
1855.	Males, . . .	24,602	1860.	Males, . . .	23,908
	Females, . .	27,688		Females, . .	27,116
1856.	Males, . . .	23,016	1861.	Males, . . .	24,382
	Females, . .	25,934		Females, . .	27,549
1857.	Males, . . .	23,354	1862.	Males, . . .	24,210
	Females, . .	26,752		Females, . .	26,752
1858.	Males, . . .	23,516	1863.	Males, . . .	24,418
	Females, . .	26,926		Females, . .	26,654

Here we see that in 1854 the deaths from phthisis were—males 24,206, females 27,078; in 1863—males 24,418, females 26,654. In the ten years, 1854 to 1863, the mortality had not increased, and amongst males in 1863 was only greater by 212 than in 1854, whilst amongst females it was actually less by 424. At first sight, this improved death-rate seems very trifling, and hardly deserving notice, until we reflect that the population of the kingdom has not stood still during these ten years, but has steadily increased year by year.

Let us examine Table B, and the improvement will be more conspicuous:—

TABLE B.

England. Causes of Death. To 1000 *Persons living.*

	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.
Phthisis, .	2·791	2·822	2·601	2·627	2·616	2·572	2·599	2·611	2·533	2·511
Bronchitis,	1·092	1·467	1·114	1·341	1·509	1·332	1·648	1·558	1·617	1·574

England. Causes of Death. To every 1000 *Deaths from all Causes.*

	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.
Phthisis, .	118·646	124·560	126·866	120·785	113·604	115·206	122·374	120·754	118·028	108·923
Bronchitis,	46·414	64·750	55·795	61·683	65·522	59·274	77·579	72·051	75·331	68·301

In 1854, in every 1000 deaths from all causes, 118·646 were due to phthisis; whilst, in 1863, phthisis claimed but 108·923 per 1000. Again, in 1854, there were 2·791 deaths from phthisis to every 1000 persons living; whilst, in 1863, the deaths were only 2·511 per 1000. It is clear, then, from these tables, that phthisis is not so fatal among us as it used to be; and the improvement can hardly be referred, I think, to anything but to more enlightened method of treatment. There certainly is no "change of type" which could account for the diminished mortality; and, considering the hereditary nature of the disease, one would naturally expect the number of phthisical families to have increased with the increase of the population, every member of such families becoming in turn the progenitor of other phthisical offspring,—and, consequently, that the death-rate would have risen with this multiplication of phthisical germs. These considerations give additional interest to the manifest diminution of fatal cases, and it is pleasant to find that our apprehensions are not borne out by the facts.

May we not hope for similar results as regards bronchitis, seeing so much has been accomplished for phthisis by the concentration of professional thought on the subject?

Let us now turn to bronchitis, and examine Table C. My statement that "the most fatal disease in England, next to phthisis, is bronchitis," is fully verified; the exceptions being those years when epidemics prevailed. In this table we see at a glance how steadily the mortality from this disease has progressed in the kingdom:—

TABLE C.—*England. Causes of Death, arranged in order of Mortality.*

1854.	Phthisis,	51,284
	Convulsions,	24,579
	Pneumonia,	23,523
	Cholera,	20,097
	Bronchitis,	20,062
1855.	Phthisis,	52,290
	Age,	29,714
	Bronchitis,	27,182
1856.	Phthisis,	48,950
	Convulsions,	23,946
	Age,	23,931
	Pneumonia,	22,653
	Bronchitis,	21,528
1857.	Phthisis,	50,106
	Age,	26,847
	Bronchitis,	25,588
1858.	Phthisis,	50,442
	Scarlatina,	30,317
	Bronchitis,	29,093
1859.	Phthisis,	50,149
	Atrophy and Debility,	27,990
	Age,	27,104
	Bronchitis,	25,998
1860.	Phthisis,	51,024
	Bronchitis,	32,347
1861.	Phthisis,	51,931
	Bronchitis,	30,986
1862.	Phthisis,	50,962
	Bronchitis,	32,526
1863.	Phthisis,	51,072
	Bronchitis,	32,025

In 1854 the deaths were 20,062; whilst, in 1863, they had mounted to 32,025! This is a fearful increase, and demands investigation. It is consolatory to observe in this table the comparative steadiness with which phthisis tends to decline.

But, it may be asserted, this increase of bronchitis in the country is due doubtless to the increase of population. A reference to Table B will soon dispel this illusion. In 1854, to every 1000 persons living there were 1·092 deaths from bronchitis; but, in 1863, these had mounted to 1·574 per 1000. And in every 1000 deaths from all causes, 46·414 were due to bronchitis in 1854; whilst, in 1863, the numbers had actually risen to 68·301 per 1000! After comparing Tables B and C, there is no longer room for doubting the increasing prevalence and the increasing fatality of bronchitis in this country.

Let us next inquire, at what period of life bronchitis is most fatal?

Table D embraces nine years, from 1855 to 1863, and is intended to show at a glance the relative mortality at various stages from birth to 95 years and upwards.

TABLE D.—*Bronchitis in England.*

	Under 5 Yrs.	5–	10–	15–	25–	35–	45–	55–	65–	75–	85–	95 & Up.	Total.
1855. Males,	4435	167	58	182	350	663	1189	2052	2618	1752	308	9	13,783
Females,	3695	177	57	181	370	594	1055	2021	2769	2065	397	18	13,399
1856. Males,	4114	135	54	141	246	480	971	1485	1940	1251	223	3	11,043
Females,	3471	179	46	151	293	465	819	1480	1891	1397	281	12	10,485
1857. Males,	4756	180	51	152	283	607	1054	1752	2221	1464	271	7	12,798
Females,	4130	193	55	161	316	521	939	1815	2573	1723	349	15	12,790
1858. Males,	5671	235	38	167	286	635	1182	2003	2458	1583	300	11	14,569
Females,	4842	271	45	200	321	601	994	1981	2870	1973	402	24	14,524
1859. Males,	4934	173	50	140	297	570	1127	1885	2357	1477	238	8	13,256
Females,	4117	203	45	155	300	505	995	1815	2519	1727	349	12	12,742
1860. Males,	6360	174	51	170	311	730	1388	2222	2892	1886	296	9	16,489
Females,	5220	165	52	172	362	626	1204	2259	3170	2147	461	20	15,858
1861. Males,	5884	149	42	183	323	750	1353	2216	2751	1723	295	11	15,680
Females,	5183	169	57	192	312	621	1198	2280	2950	1949	379	26	15,306
1862. Males,	6647	169	50	153	349	714	1336	2258	2759	1792	271	11	16,509
Females,	5558	204	61	169	343	653	1163	2221	3158	2060	405	22	16,017
1863. Males,	6410	214	56	148	298	626	1263	2254	2751	1808	314	14	16,156
Females,	5589	215	65	139	325	616	1173	2206	3047	2062	410	22	15,869

Of all deaths from bronchitis, nearly one-third, speaking generally, occur under 5 years, and this is the most fatal period. The next most fatal stage is from 55 to 65, the mortality in this term being greater than at any time since infancy. The death-rate is lower from 5 to 10 than at any other period of life. From 10 to 35 the mortality gradually increases; but from 35 it mounts up with rapid strides till the second most fatal stage is reached, 55 to 65. On the other side of 65 there is an equally rapid decline; but this is doubtless due to the fact, that the persons who reach this advanced age are fewer in number.

Table E, which, in common with the other tables, I have prepared from the Registrar-General's Reports, discloses a very remarkable fact, and one for which I was not at all prepared. Speaking generally, the mortality from all causes throughout the kingdom is pretty equal in both sexes, or but slightly in excess amongst males; and as regards phthisis and bronchitis, the death-rate is always higher amongst males than females.

TABLE E.—*Phthisis and Bronchitis in London.*

	Phthisis.	Bronchitis.		Phthisis.	Bronchitis.
1854. Males,	3914	2339	1859. Males,	4231	2528
Females,	3340	2277	Females,	3542	2509
1855. Males,	4070	2774	1860. Males,	4166	3226
Females,	3586	2789	Females,	3572	3515
1856. Males,	3810	2284	1861. Males,	4233	3139
Females,	3484	2302	Females,	3543	3346
1857. Males,	3970	2742	1862. Males,	4238	2968
Females,	3399	2968	Females,	3633	3026
1858. Males,	3953	3125	1863. Males,	4214	2927
Females,	3461	3266	Females,	3684	3074

From Table E, which applies to London simply, we learn that this rule holds good only as to phthisis; but with reference to bronchitis, things are reversed, and the mortality is greater amongst females than males. It would be an interesting subject for inquiry, to ascertain the cause of this fatality amongst women. It may be that they are less able to bear privation, want, and exposure, than men; and that medical aid is seldom sought for bronchitis till it has become very severe, and in many cases well-nigh past relief. Again, women in poverty are more thinly clad and have a less active life than men, and hence are unable to resist extreme cold or any sudden depression of temperature so well as men. It would be very interesting to know what classes of women suffer most, but for this purpose our register of deaths is useless. For if a married woman has any occupation of her own, and she die from bronchitis, the occupation of her husband appears in the register, but hers is omitted. And so of unmarried females living at home, but earning their bread by trade: the occupation of the father is recorded, whilst that of his daughters is omitted. It is futile, therefore, to look for statistics from this source, and we can only hope to obtain them from the records of individual observation.

But what is the cause of this prevalence of bronchitis in England? and why has it increased of late years? I do not propose to go into minute details, which may be found in any systematic treatise, but rather to consider those causes which are obvious to common observation, and apparent to any one who will take the trouble to investigate the subject, but apt to escape notice from our very familiarity with them.

1. *Constitutional.*—I am not prepared to say that bronchitis is directly hereditary; but that it is so secondarily and indirectly, I have no doubt, in those cases where the rheumatic diathesis has been transmitted to offspring. The observation of a large number of instances at the North Staffordshire Infirmary taught me that previous rheumatic disease was a frequent predisposing cause of bronchitis, even when no cardiac affection was present; and the children of rheumatic parents were equally liable to it. The statistics which Dr Greenhow has lately laid before the profession, entirely support this view; and my own experience confirms the accuracy of his statements. In rheumatism, it is believed there is a special tendency of the fibrous tissues to inflammatory action. May not the fibrous structure of the bronchial tubes render them peculiarly susceptible to the rheumatic inflammation, and liable to those changes which we know take place in similar tissues under similar circumstances, in other parts of the body? May not the tubes in this way become thickened by deposits, narrowed and constricted, their elasticity lost, and a condition established favourable to the development of bronchitis on the first accession of cold? According to Dr Greenhow, gouty subjects also are predisposed to bronchitis; and he adduces many instances which have occurred in

his practice. His paper on this subject, in the *Lancet*, is full of interest.

Cardiac disease, whether congenital or acquired, is another cause of bronchitis.

Syphilis, again, is proved by Graves and Stokes to be a fruitful source of bronchitis, and it not unfrequently runs a fatal course when the bronchial affection is once established. The increasing spread of this disease in the kingdom may possibly have contributed somewhat to the prevalence of bronchitis.

2. *Occupation.*—It is well known that persons exposed to the inhalation of irritating particles floating in the atmosphere, or of chemical irritants, are especially subject to bronchitis; such as stone-masons, knife-grinders, flax-workers, colliers, miners, bakers, potters, etc.[1] The commissions of inquiry which have been instituted from time to time by the Government may have done somewhat to ameliorate the condition of these tradesmen, by suggesting the employment of such means as have rendered their occupation more healthful and less fruitful of disease.[2] Still, the mortality in these trades is very high; and it is of national importance that nothing should be left undone to reduce it.

3. *Social Indiscretions.*—What a frightful list the name suggests! It is impossible in this place to consider more than those which obviously contribute to the causes of bronchitis. I have long thought that no men laid themselves out, if I may so speak, so deliberately for this disease as professional men, bankers, merchants, and city men. Leaving home early in the morning, after a hurried breakfast, they rush up to town by rail if they live in the country, and by omnibus if they live in the suburbs,—probably reading the *Times* by the way, and doing their best to secure a little indigestion or a headache, before reaching their destination. Then comes the business of the day, with all its worries, anxieties, and correspondence, till evening brings relief. During these long hours, many men, to my certain knowledge, never touch a particle of food, and a good many others never allow themselves more than a glass of sherry and a biscuit. This may be all very well in the summer time, but in cold frosty winter weather, a man who so acts is guilty of flagrant neglect. After a hard day's work, wearied and worn out with mental or bodily exertion, they start on their homeward journey, just in that very condition which is favourable to the inroad of disease. The vital energies being depressed by the labours of the day, and the animal heat lowered by the absence of food, what resistance can be offered to the cold of a railway or omnibus ride in the evenings of winter? Is it any wonder that coughs and colds, and "tightness at the chest," which excite little

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[1] For a full description of these cases, *vide* Graham and Makellar, in Edinburgh Medical Journal; Greenhow, in Medico-Chirurgical Transactions; my Prize Thesis on "Potters' Bronchitis."

[2] *Vide* various Blue-books on "Public Health."

attention at first, should be quickly developed into bronchitis? I am persuaded that many barristers, lawyers, merchants, and others, earn for themselves their first attack in this way; and some lessen their chance of escape still more by sitting in wet shoes, etc., at chambers and counting-houses, and this especially in snowy weather. Such cases have repeatedly come under my notice. It may be urged that many go on in this manner for years without being the worse for it! Granted. If a man possess a good constitution, he will resist the influences of cold during his youthful days. But from the tables which I have given, it is evident that youth is the period most free from bronchitis. It is when advancing years reduces vital power that indiscretions become disastrous in their consequences; and hence the mortality is found to increase with increasing age. Younger men also succumb, if their vital energy be impaired by any cause, whether constitutional or otherwise. Another indiscretion which requires notice (and here the delinquents are mostly ladies) is the reckless manner in which people expose themselves, when thinly clad, to sudden and great vicissitudes of temperature. The entrances to our churches, theatres, ball and concert rooms, and the platforms of our railway stations, will afford plenty of examples of the truth of my statements. Ladies in mid-winter, with the thermometer at 32°, will leave a heated room of more than double that temperature, and clad in low evening dress, with neck and shoulders bare, will expose themselves to currents of cold air for an indefinite time, waiting for the announcement of their carriages. The thin opera cloak commonly used affords but little protection, and is worn indifferently both winter and summer! At Exeter Hall and other places, I have again and again seen ladies waiting and shivering till they could reach their carriages, not unfrequently having to travel some distance up or down the street to do so. The currents of air in the passages of our public places of amusement are most trying, even to those in robust health. As soon as the doors are thrown open, at once the cold air from without rushes into the heated interior, and meets the audience, prepared or unprepared. Many become chilled, and the following morning we are called in, because a little feverishness has caused a restless night. This is not an uncommon "first act" in a good many fatal cases of bronchitis. It is just the same in our churches and chapels, and all places where, the means of exit being limited, egress is of necessity slow and prolonged; and those persons who could resist exposure for a short time are unable to withstand it for a longer period. So, too, many take cold at dinner-parties, balls, and evening-parties, in that little passage from the drawing-room to the carriage. The cold air meeting the heated surface of the body checks perspiration, disturbs the balance of the circulation, and favours the development of topical inflammation.

Another folly of which ladies are guilty, and against which the medical profession has not sufficiently warned them, is the wearing of thin boots and shoes with soles no thicker than a shilling piece. In a moist climate like ours, it is ridiculous to suppose that this is protection enough for the feet. In snowy or rainy weather, these flimsy articles are useless; the water penetrates the leather and renders the feet wet and cold; shivering comes on; sore throat and feverishness follow; and the upshot is oftentimes either bronchitis or pneumonia. The introduction of French boots and shoes has done a good deal in this way; but for our English ladies, who indulge in walking exercise to an extent never dreamt of by their French sisters, these boots are ill-adapted. If the feet be not properly protected from rain and snow, it is next to impossible to escape some pulmonary affection or other.

4. *Atmospheric Changes.*—I come now to perhaps the most fruitful source of bronchitis in England—sudden alternations of temperature, wind, and moisture. We learn from the Reports of the Registrar-General, that the period when bronchitis is most prevalent is in the winter, or, in other words, the mortality is greater at this than at any other season of the year. It is then that cold north and east winds prevail, the moisture in the atmosphere is most abundant, and the temperature of the air is at its lowest. On the contrary, during the summer months we have for the most part warm and soft winds, a dry and heated atmosphere, and an elevated and constant temperature. It is at this season that bronchitis is infrequent. We have then *primâ facie* grounds for believing that the mortality from it is influenced by the weather and the atmosphere; and this is fully borne out by a further reference to the Registrar-General's Reports.

TABLE F.

TEMPERATURE.	1848–54.	1855–57.	1858–63.
Mean Temperature, . .	49·4	49·0	49·4
Lowest do., . . .	47·7 (1853)	47·1 (1855)	47·0 (1860)

In Table F, we have the mean temperature from 1848 to 1863, as well as the lowest; and it is worthy of observation that in those years when the temperature was lowest the mortality was greatest. The Registrar-General adds that "the mortality of bronchitis is immediately doubled or trebled by a depression of the temperature of the air, while the deaths by phthisis exhibit little variation." The truth of this statement appears by a reference to the years 1855 and 1860 in the tables previously given. Moreover, in the "Public Health" reports in the *Times*, the deaths will always be found to multiply with the fall of the thermometer. Thus, for the week ending 10th March 1866, the mortality was (in London) excessively high; the weather was cold for the season, and the fall of temperature had lasted nearly four weeks; there were 285 deaths referred to bronchitis against an average of 186. In the week ending 17th March of the same year, the temperature being still low, bronchitis was returned in 267 cases (in London) against an average of 184. The opening of the present year was marked by an unusual degree of cold; the severe weather of the first week of the year was followed by rain and two or three warm days till about 12th January, when the cold wave began to flow again over London, and the temperature for the week ending 19th January sank 10° below the average temperature of the season; 308 deaths from bronchitis were registered. From this period the weather began to grow milder, the temperature gradually rose and was followed by a corresponding improvement in the death-rate. For the week ending 2d February, bronchitis was returned in 271 cases (in London), and for that ending 9th February in 204 cases. Reviewing the returns for the year 1867 to this date, we find the deaths for bronchitis in London stand thus, 224, 178, 375, 308, 399, 271, and 204. The severe frost, beginning to tell with effect in the third week, maintained a high death-rate till a mild temperature set in and stayed the excessive mortality.

5. *Clothing.*—I do not think importance enough has been attached to insufficient clothing as a cause of disease generally, and of pulmonary affections in particular. Living in a changeable climate like ours it is impossible to lay down absolute rules for guidance in this matter. Common sense is the best teacher; but the public is sadly deficient in scientific knowledge, which is the only efficient director of their acknowledged common sense. Many content themselves with donning their winter garments on 1st November, and resuming their summer attire on 1st May, regardless of the temperature of the air at these times. They forget that a body which has grown accustomed to winter clothing in a warm November or mild December would assuredly feel the cold acutely in a sharp January unless additional clothing were worn. Many, however, fancy themselves secure because they have adopted their wonted vesture. This is a mistake; everyone should wear flannel next the skin, in winter at least, and adapt all external coverings to meet the mildness or severity of weather. With old age, additional clothing is needful; but man is such a creature of habit that it is difficult to persuade him that the clothes worn at 40 are insufficient to maintain the animal heat at 60 years of age, till perhaps a sharp attack of bronchitis teaches the well-known law, that the power of resisting cold diminishes as age advances. It is amongst infants and aged persons that the mortality from bronchitis is greatest, doubtless because at those periods of life the body is less able to resist the deleterious action of cold than at middle age and youth; and it is a good rule to vary the amount of clothing according to the heat-forming powers of the individual. Exposure to cold for a long time either in travelling, in church, or in the street, as well as abstinence for a protracted period from

food are injurious both to the very young and the aged, whose animal heat is rapidly lost and but very slowly recovered.

There is a good deal of philosophy in the Scotch fashion of using the "cosy" for the teapot. It prevents the radiation of heat; but a time at length comes when the teapot, in spite of it, grows cold, because the heat is not maintained within. So if an aged person be warmly clad, he will resist the cold only so long as the animal heat is kept up by a constant supply of food at short intervals, and his power of generating it is in excess of the radiation which is constantly going on from the surface of his body. Hence the importance of warm and suitable clothing, both in retaining animal heat and preventing the injurious effects of cold on the system.

In this imperfect sketch I have endeavoured to draw attention to the prevalence of bronchitis in the kingdom, in the hope that others may be attracted to an investigation of the subject. It is only by the combined efforts of many that we can hope to arrive at a satisfactory solution of the question.

ARTICLE IV.—*Case of Dislocation of the Hip-Joint.* By P. H. MACLAREN, M.D., Lasswade.

THE following details of a case of dislocation of the hip-joint are interesting, illustrating as they do, 1*st*, the occasionally trivial nature of the cause; 2*d*, the almost total absence of subjective symptoms; and 3*d*, the simplicity of the mechanical aids necessary for reduction in these days of chloroform.

On the 29th April last, A. L., a tall muscular young man, æt. 19, walked a distance of half a mile to my house, to consult me about a slight pain in his hip and uneasiness in walking, which he attributed to a bruise, the result of a fall he had had fourteen days before. Inquiring more minutely into the nature of his accident, I found that the patient, in his capacity of a paper-machine man, was running to repair a flaw in the sheet when his feet slipped on the wet floor, and he fell backwards, alighting on his hands and heels. He felt he had injured his hip, but was able to work and walk home, a distance of two miles, and continued to do so on the two days following. After this, in order to try if rest would remove his discomfort, he remained at home until I saw him.

He walked with a slight halt, and when he stood, his body stooped a little forward; the affected limb was advanced, and the foot neither inverted nor everted. Placing him on a sofa, the whole limb was found lengthened, the hip flattened, the trochanter displaced downwards and forwards, and an inch and a half more distant from the ant. sup. spinous process of the ilium than on the opposite side. All the movements of the limb were perfect, except that of external rotation, which also occasioned much pain. He had thus sustained a dislocation of the head of the femur into the foramen ovale.

The same evening, I laid the patient on a hard mattress on the floor, put him under chloroform, and placed four assistants thus:—one to keep firm the opposite knee and pelvis, one for the shoulders, a third, kneeling with his back to the patient, to take the leg of the affected limb over his shoulder, and to pull steadily forwards and upwards; after a little, the fourth to place a towel round the upper third of the femur and draw outwards. When this had been done for about two minutes, I allowed them to relax their efforts, and was glad to find, without jerk or noise, the bone had returned to its place.

Rest in bed for a fortnight, with a bandage round the knees, completed the cure.

ARTICLE V.—*Evidence regarding the Efficacy of a "New Remedy for Dysentery."* By WILLIAM KERR, Surgeon, Corresponding Member of the Medical and Physical Society of Calcutta, and of the Medico-Chirurgical Society of Glasgow.

THE temperature of a Canadian summer is somewhat tropical, from 80° to 90° being regarded as ordinary summer heat, from 70° to 80° as cool, and from 90° to 100° as hot weather. Probably owing to the greater warmth, dysentery is more frequently epidemic than in Scotland, and a greater proportion of attacks are severe, even at the commencement. The loss of two or three members of a family is a not unfrequent occurrence; and among infants and children the disease is especially fatal. A severe epidemic has, therefore, as one of my correspondents styles it, "a name of terror." The following reports from medical gentlemen, some of them strangers to me, contrast favourably with this mortality, and are likewise striking in regard to the rapidity of relief and cure. They all occurred last autumn, and were treated by "a new remedy for dysentery," of which I published an account in this Journal for June 1865.[1] At the present date I expected to be in possession of several other reports, which have not yet reached me; but I have kept back none, so that my readers are possessed of every fact known to myself.

I may here mention, that I find I have not stated with sufficient clearness in my first paper that, in a very few adults, the digitalis combination altogether fails, and that with squills succeeds, and *vice versa* in infants.

Dr Mackintosh of Hamilton, C.W., sends me the following cases:—

"No. 1.—12*th July*.—An adult; mild form of dysentery, very speedily relieved, and in three days cured. He then went to another part of the country, and about a month afterwards had a severe attack of the same disease, which, notwithstanding the assiduous use of Dover's powder, and starch and laudanum enemata, did not entirely cease for three weeks.

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[1] The reader will there find the composition of the medicine and other particulars.

"Nos. 2, 3, 4, 5, and 6.—All in one family, between the 22d and 31st July.—No. 2. A delicate boy, 8 years of age, had been ill for nearly a week; strength much reduced; motions frequent and characteristic. Speedily relieved, and in about a week cured. Nos. 3 and 4. Aged 6 and 4 years. Seen in the incipient stage. They were speedily relieved, and a few doses restored them to health. No. 5. The father, aged 50. Taken ill on the 28th July, when he was obliged to leave his workshop. Motions frequent and characteristic. The acute symptoms were relieved by the 31st, but, from intemperate habits, the disease remained in a chronic state for about two weeks. No. 6. A daughter, aged 18, who resided out of Hamilton, paid the family a visit, and next day was seized with dysentery in her own house. Cured by six doses.

"No. 7.—26*th July.*—A woman, aged 35. Two days ago illness commenced; symptoms somewhat severe. Medicine was given in the usual form, and by the 29th she was quite well.

"No. 8.—27*th July.*—Child, aged 30 months; motions frequent, bloody and characteristic. 30*th.* Much relieved. In a few days cured.

"No. 9.—6*th August.*—An adult; ill for two days; symptoms somewhat severe. Relief speedy and effectual. 15*th.* Cured.

"No. 10.—7*th August.*—A woman, aged 49. Has for years been ailing with ulcers of the mouth and tongue, and severe dyspeptic symptoms. Two days ago attacked by severe dysentery. 8*th.* All the symptoms less severe; last night slept well, a comfort she had not enjoyed for two nights previously. 13*th.* Cured. Latterly the medicine was given without opium, and she now states that her old ailments are much lessened, and expresses her conviction that the continued use of the medicine will restore her to health. Have not since seen her.

"No. 11.—9*th August.*—A child, aged 2 years. Has been ill all summer with diarrhœa, which has now become severe dysentery; he is very much reduced. Three grains of the squill combination to be given three times a-day. These mitigated all the symptoms, and at the end of a week he was so much improved that the medicine was discontinued. 28*th Oct.* He is now a plump, healthy-looking child.

"No. 12.—10*th August.*—A delicate woman, aged 27. Ill a day and a night. Relief speedy and permanent. 11*th.* Cured.

"No. 13.—14*th August.*—A woman, aged 38. For the last three or four days moderately ill, but much worse to-day. 17*th.* Considers herself well. No relapse.

"No. 14.—A child, aged 14 months. Moderately severe attack. Cured in five days.

"No. 15.—28*th August.*—A child, aged 2 years. Very much the same as No. 11. Almost every remedy had been tried by the family physician. In a week, under the squill combination, the evacuation became natural. 3*d Oct.* Well.

"No. 16.—7*th Sept.*—A boy, 3 years of age. Relief speedy and permanent. 15*th.* Cured.

"No. 17.—8*th Sept.*—A woman, aged 28. Ill for about a week. Several domestic remedies had been tried, but without alleviating the symptoms. Three doses of the digitalis combination gave great relief, and procured sleep. 12*th.* Cured.

"No. 18.—14*th Sept.*—I never before saw a patient recover from so severe an attack as in the case I am now to relate. A man, aged 45, called at my house, stating that he had been ill for a day or two, and that he had got much worse this afternoon; he hoped, however, by warmth and rest in bed, together with domestic remedies, that by next morning he would be better, and therefore declined medicine. 15*th.* At 7 o'clock A.M. he sent for me, and on my arrival, stated that he had been exceedingly ill all night, having been out of bed every ten minutes, and every motion accompanied with excruciating pain and tenesmus. I directed six and a half grains of the digitalis combination to be given every two hours. In less than two hours, that is before the second dose was taken, pain was much diminished, although the frequency of the motions was still considerable. By the second day these were reduced to one every three or four hours, instead of every two. On the first night of my treatment, the patient slept well, but not on the second; and on the third, the motions having still a dysenteric character, and still occurring every three to four hours, he had delirium and illusions, resembling delirium tremens, but there was no tremor of the tongue or other part of the body; the pupils were uniform and rather dilated; the tongue somewhat furred and dry; and there was a tendency to cold sweats. On the whole, I am of opinion that this state was caused by the action of one or more components of the medicine, which was intermitted for a time; but it was three nights before sound sleep was obtained. The patient remembered his hallucinations, and at first could scarcely be persuaded that they were unreal. Dysentery in the present case assumed a chronic form, the only instance, in my experience, of this occurring with your medicine; and after a fair trial, I substituted a mixture of sulphates of quinine, copper, and morphia, with good effect.

"No. 19.—16*th Sept.*—A child, 2 years of age. Chronic dysentery with vomiting, which last was removed by the first dose of the squill combination. The dysenteric symptoms gradually improved, and in a week he was well, and gaining flesh.

"No. 20.—18*th Sept.*—A woman, aged 40. Moderately severe case. In five days cured by the digitalis combination.

"No. 21.—18*th Sept.*—A woman, aged 37. Severity of the symptoms very much the same as the last, but the cure protracted to fourteen days by errors in diet.

"No. 22.—13*th Oct.*—A boy, aged 4 years. Ill for more than a week. Motions very frequent and bloody. Cured in ten days.

"No. 23.—15*th Oct.*—A girl, aged 14. A severe case. All the symptoms were gradually relieved.

"During the epidemic a number of slighter cases occurred, which do not require special notice.

"I may state that all above two or three years were treated with the digitalis combination, except in one or two instances, where it produced a depressing effect upon the pulse, and all below these ages with that with squills. To adults, the dose was usually six or seven grains three or four times a-day, according to the urgency of the symptoms; and in the greater number of instances, the total doses did not exceed six. In the cases under three years of age, the doses varied from one and a half to three grains (the quantity of opium in this being only half of that for adults). To the adult who became delirious, not less than six grains of digitalis, and twelve of the other six ingredients, were given in the first twenty-four hours, and continued to be given at this rate for twelve hours longer, a quantity in the same space of time far exceeding any I have ever given.

"In all instances, and I can now speak from an experience of five autumns, the transition from it may have been excruciating suffering to comparative ease was speedy, and usually accomplished by one or two doses. Sleep, to which, from their distress, some of them had been strangers for several successive days and nights, came with relief to pain, and a tolerably sound night's sleep has often been pleasingly contrasted with a day of agony. In conclusion, with the single exception of the man who became delirious, the medicine produced no disagreeable effect in any instance, the patients being sensible only of relief. I have likewise to say that all have recovered."

Dr Ogden, lecturer on Materia Medica, Toronto, writes:—"Last autumn, two or three of the most severe cases of dysentery not yielding to the ordinary treatment fast enough, if at all, I used your medicine with the utmost satisfaction to myself; and in one case, which two medical men had given up as hopeless, to the astonishment of some Boston practitioners who happened to witness it."

This season dysentery was not epidemic in Galt, but the following severe sporadic case occurred to Dr Philip:—"A mulatto, aged 54, a habitual drunkard, had suffered under this disease for a week, during which time he was altogether neglected. Dr P. found him dangerously ill; fever was high, severe tormina, and tenesmus, constant calls to rise, and every quarter of an hour motions consisting of mucus and large quantities of blood. Great relief after four doses; recovery gradual, though slow."

Dr MacIntyre of Hespeler, in this county, has used the combination in dysentery in the autumns of 1864 and 1865. In the former of these years only a few cases, not of special importance, occurred; but in 1865 his locality was visited by a severe epidemic, other practitioners losing numerous patients. He made trials of chlorodyne, which were successful in the slighter cases, but not in the severe; these readily yielded to my combination, which Dr M. soon came to use exclusively, and out of about sixty cases, fifteen of which were severe, not one died. Among the worst was the following:—A man, of 65 years of age, had been ten days ill, attended by a medical gentleman, who trusted chiefly to opium and alum, the former being given to the extent of sixteen grains daily. There was, however, no relief, and the medical opinion being that death would occur in about twelve hours, Dr M. was sent for. At this time the motions were frequent, and apparently of pure blood; pain was severe, accompanied by restlessness and much anxiety; he had scarcely slept since the illness commenced; weakness was so great that he could not be raised without danger of fainting, and the skin was cold and clammy, apparently justifying the unfavourable prognosis. Dr M. gave eleven grains of the combination, containing one grain and three quarters of opium. In less than an hour the patient said that a great and beneficial change had come over him, anxiety, restlessness, and pain had much diminished, and he felt that recovery was not only possible, but probable. Eight hours elapsed before another dose was given, now followed by a long and sound sleep. He was able to go out of doors on the eighth day, nine doses in all having completed the cure. I may say, in a few words, that the whole of Dr M.'s cases confirm what I have elsewhere stated respecting great and speedy relief of pain, procurement of sound and refreshing sleep instead of restlessness, and also of rapid recovery.

Dr Orton of Fergus, towards the close of a severe epidemic, from which numerous deaths had occurred among his patients, having heard of Dr MacIntyre's "marvellous success," applied to me, and subsequently treated five severe, and a somewhat greater number of slight cases. There were no more deaths, and in every instance recovery was speedy,—two or three doses being usually sufficient to produce complete cessation of pain and tenesmus, and procure quiet and refreshing sleep. In one case, the patient being 60 years of age, and several days ill, latterly with bloody mucous evacuations every half-hour, the first dose relieved him from all painful and uneasy symptoms, and procured a comfortable sleep, which he had not enjoyed for four or five nights previously. The fatality of the disease, thus stopped in Dr Orton's practice, continued unabated in the hands of neighbouring practitioners.

Dr Stille, Otsego County, New York, applied to me in consequence of the prevalence of a severe epidemic of dysentery, "accompanied by frequent bloody evacuations, great prostration of strength, and cold clammy perspiration, which had proved very fatal under all kinds of treatment." A month afterwards, he writes, "that he had used my medicine with great satisfaction; that he had given it in a considerable number of very bad cases, some even *in extremis*, and uniformly with success."

Dr Eurrs, Union City, Michigan, says that "when he first obtained my medicine he had two patients with dysentery, brother and sister, aged respectively 12 and 13. They had been for several days under treatment; the evacuations (mucus mixed with considerable quantities of blood) were so frequent, and the tenesmus so severe, that they could with difficulty be retained in bed; at the same time they had violent fever. The severity of the symptoms, and the failure of other remedies, made *the prognosis very unfavourable*." Dr Eurrs immediately gave each three and a half grains, and directed the dose to be repeated every four hours. At his next visit, twelve hours afterwards, he was "greatly surprised and pleased to find his little patients much relieved." The same remedy was continued at first every four, and by-and-by every six and eight hours. The girl in three, and the boy in four days were convalescent. Dr Eurrs had no more cases, as the epidemic now ceased.

Dr Bell of Ayr, C.W., saw, in consultation with Drs Rounds and Patten of Drumbo, a woman who had been confined about a week previously, and who, about thirty-six hours before his visit, had been seized with severe dysentery. The evacuations were muco-sanguinolent, and occurred at such short intervals, that she could scarcely be retained in bed. Pain and tenesmus were intense, and vomiting added to the distress. The pulse was exceedingly frequent, and on account of weakness could scarcely be numbered. She had been treated with opium and calomel, without the slightest relief. Seven grains of the digitalis combination were immediately given; in an hour she was decidedly easier, and the pulse less frequent. She was cured in a few days by seven doses, or forty-nine grains in all. Another patient, a man, was seized with severe dysentery. On account of the loaded state of his tongue, calomel and castor-oil were given, but without relief to the dysenteric symptoms. He had frequent muco-sanguinolent evacuations, accompanied with severe pain, tenesmus, and vomiting. The first dose, seven grains, speedily gave relief, and eight doses in all, or fifty-six grains, completed the cure.

Dr Bingham of Ayr, C.W., who has used the medicine for eight years, a longer period than any other practitioner, thus writes me:—"I lost many patients with dysentery before I became acquainted with your remedy; but from that time till last autumn I did not lose one. In this period there were several epidemics, and I treated many, not a few of whom laboured under the worst forms of the disease. In the early part of last season dysentery predominated; but as autumn advanced, the character of the epidemic changed to summer cholera. Under a calomel and opium treatment, in the hands of others, these cases were certainly formidable; yet, under your remedy, my patients got rapidly better, and were soon well. Out of about fifty or sixty having dysentery or summer cholera treated last season, two died,—one, an infant, had dysentery with convulsions, whom I first saw about twelve hours before death; the other, an old woman, with summer cholera, in whose case I abandoned your medicine, because it was rejected by vomiting." (It might have been given in an enema.) "In conclusion, I am justified in saying that my confidence in your combination is unbounded, and, to me at least, severe epidemic dysentery has long ceased to be a name of terror."

The successful treatment of so many severe cases of dysentery, and of several of summer cholera, suggests the applicability of the medicine to a more terrible malady,—Asiatic cholera. Having made this suggestion, I must leave its determination to those who have opportunities of treating that formidable disease.

BRAEHEAD HOUSE, GALT, CANADA WEST.

ARTICLE VI.—*The Mechanism of the Thorax, and its Pathological Results, with Remarks on Thoracic Injury and Disease.* By JOHN RHIWEN ROBERTS, M.D.

WRITERS on the practice of medicine agree that tubercles almost invariably affect the upper lobes of the lungs, while pneumonia very rarely elects that seat, but occupies the bases of the lungs in preference; and they also regard it as a very curious fact, that the left lung is much more obnoxious to tubercular disease than the right, while the right lung is affected with pneumonia twice as frequently as the left. "Why it should be so, I know not," says Watson in his Lectures on the Practice of Physic; and the silence of other authors on this point proves that they have searched for a cause in vain, or that they did not trouble themselves at all about the reason why. It appears to me very singular that a cause which operates so uniformly as to determine that, in more than nineteen cases out of twenty, the seat of tubercle is the apex of the lung, should have eluded discovery so long. This is rendered still more singular when we consider that pneumonia occupies the bases of the lungs with equal uniformity, and that tubercle prefers the left lung just in the same way that pneumonia shows a preference for the right. Now, there must be some very good reason for this; and I purpose, therefore, to explain how, in my opinion, the facts are brought about as the result of the operation of a well-known pathological law in conjunction with the mechanism of the thorax and the practice of using the right arm more than the left, by which it follows that the right lung is more exercised than its fellow of the opposite side.

The law referred to is, that tissues wanting in functional activity are apt to suffer degeneration and low forms of disease; while those which are excessively active in the performance of their functions are apt to hypertrophy and suffer from diseases of a sthenic type.

Now, there can be no better example of the former class of diseases than tubercle; and inflammation is regarded by common consent as the most typical example of the sthenic class. It will be afterwards seen that tubercle affects the parts of the lung least exercised, that pneumonia occupies the parts in which functional activity exists in the highest degree, and that the difference in functional activity of the apices and bases of the lungs is entirely dependent on the mechanism of the thorax; while the habit of using the right arm more than the left produces the same results as regards the two lungs that the mechanism of the thorax does in their apices and bases. The custom of using the right arm more than the left has been long thought to cause the greater development of the right side by its greater exercise, and thus determine the curvatures of the spine laterally with the constancy met with, so that I need not occupy space in elucidating what is generally believed in; and I shall leave this point with the remark, that the greater exercise of the right lung, which it necessarily entails, is quite sufficient to determine the election of the right lung as the seat of pneumonia, as well as the election of the left as the seat of tubercle, according to the usual operation of the law above alluded to. But that the conformation and mechanism of the thorax of necessity causes the apices of the lungs to be infinitely less exercised than their bases, is a point that has not, so far as I am aware, attracted the attention of pathologists or others; and to the examination of this subject we shall now turn.

The mechanism of the bony thorax is well described by Mr Ward, in his valuable work on Osteology. He there points out that the anterior ends of the ribs are at a lower level than their heads; that the middle of each rib is lower than either end; and that the ribs concerned in respiration (the short ones bounding the abdomen taking little part in the process) increase in length from above downwards. In the movements of respiration, the sternal ends of the ribs are raised to the level of their heads, and depressed again to their former position; at the same time the middle of each rib is raised to the level of its head and sternal end, and again restored to its former place. In this way the antero-posterior and lateral diameters of the chest are alternately enlarged and diminished in such a manner as to effect inspiration and expiration of the air we breathe. But we have seen that the lower ribs concerned in respiration are much longer than the upper, and it hence necessarily happens that the antero-posterior and lateral diameters of the lower portion of the chest suffer much greater increase and diminution in the movements of respiration than do those of the upper part of the thorax, where the ribs are very short, almost horizontal, and nearly fixed. I need hardly point out what effect this must have on the lungs and their function. For, since they accurately fill up the chest in its expanded and contracted states, it of necessity results that the lower lobes of the lungs expand and collapse to exactly the same degree as do the ribs bounding them: the same is true of the apices of the lungs. Hence the apex of each lung must be infinitely less exercised than the base; and this is due mostly to the mechanism of the bony thorax,—the diaphragm aiding it, however, in the production of this result by its ascent and descent at the same time that the chest is enlarging and collapsing; for the descent of the floor of the thorax must tend to expand the portion of the lung that is in closest proximity to it, while it has little effect upon the portion of lung caged up in the upper part of the thorax. There can be no question, therefore, that the bases of the lungs are infinitely more active in the performance of their function than the apices are. For this reason, I believe, we find tubercle invariably affecting the apex first, while pneumonia uniformly begins at the base, as the inevitable result of the operation of the law given above.

Not long ago, Professor Laycock suggested that tubercle and inflammation elected their respective seats in the lungs as a consequence of the relative vascularity of the apex and base of those organs,—tubercle being due, as he believes, to the defective blood-supply to the apex, and pneumonia being caused by the excessive vascularity of the base. No doubt this is a step in the causation. I perfectly agree with him that defective supply of blood may cause tubercle in the apex, and that excessive vascularity renders the base obnoxious to inflammation. But I also believe that he goes only part of the way, and that the defective vascularity and tubercle of the apex, as well as the excessive vascularity and inflammation of the base, are simply due to the mechanism of the thorax, combined with the law that tissues actively performing their function tend to become vascular, to hypertrophy, and inflame; while tissues not sufficiently exercised tend to become defectively vascular, to atrophy, and to suffer from degenerate forms of disease. Since, as we saw before, the mechanism of the thorax causes the base of a lung to perform its function more actively than the apex, it necessarily results that the law alluded to steps in and produces the phenomena we observe. In the first place, it causes the excessive vascularity of the base, and produces the defective blood-supply of the apex. The next step is to establish pneumonia in the base or produce tubercle in the apex, according as the individual is predisposed to, or circumstances favour, the one or the other disease.

Such are my views on this subject. They are the only ones that have been put forth in explanation of the startling facts they relate to, with the exception of the above suggestion of Professor Laycock to his class. So far as I am aware, no theory of their causation has ever been offered in print before; and they have been regarded as ultimate facts in pathology, or as facts regarding the causation of which we are ignorant, by all who have written on the subject. But these views have been objected to, on the ground that the functional activity of both apex and base is "normal," and therefore cannot, in its various degrees, be a cause of tubercle in the one situation or of pneumonia in the other. The same objection might be urged against Professor Laycock's theory, as, it might be maintained, the relative vascularity of the apex and base is also "normal," and cannot therefore be a cause of disease. This simply amounts to saying that whatever is normal is perfect, and cannot be a cause of disease. But who is prepared to subscribe to such a doctrine? It is normal that a very large percentage of human beings should die of tubercular disease. Is this perfection? It is normal for teeth to break down in the performance of their function, and to decay very extensively before the majority of people arrive at middle age. But is that evidence of perfection? The fact is, nothing God has created is perfect. Astronomy presents us with the nearest approach to perfection of anything I know. But even the heavenly bodies sometimes stand in each other's light. How much less perfect is man with his numerous "ills that flesh is heir to!" When it is a fact that there are numerous elements of imperfection in our constitution, no man ought to be charged with irreverence for pointing them out; and I hold that the mechanism of the thorax leading to the deposition of tubercle in the apex, and to the development of imflammation in the base of the lung, is one of man's numerous imperfections. Dr Humphrey, I am glad to find, lends me valuable testimony in support of these views. He says that "Some explanation of this peculiar tendency of ulcers to fasten upon the legs is required; and I believe that it is to be found chiefly in the fact, that the leg is a weak part of the body. To speak of a weak part of the body may seem unjustifiable—almost irreverent. Yet, unquestionably, the body has its weak parts. Indeed, every part may be said to have its weaknesses, rendering it liable to certain diseases—some parts to some diseases, some to others; and the tissues may be said to be weak if they are unequal to their ordinary requirements." I freely grant, therefore, that, as the eminent man who objected to my theory maintained, the customary activity of the lungs in their different parts, and in its different degrees, is normal; equally normal is it that tubercle occupies the apex of the lung and pneumonia the base; and I maintain that the one normality is the cause of the other. Finally, I have, for the reasons given above, arrived at the conclusion, that the sequence and causation we have traced in these phenomena can be followed to their origin in the mechanism of the thorax.

I shall now turn from pathological to practical considerations regarding the conformation of the thorax and the mechanism of respiration. When a pointed instrument penetrates through the pleura costalis without wounding the pulmonary layer of the same membrane, pneumo-thorax is sometimes established by the air rushing into the cavity of the pleura with each inspiration; but expiration may force none of it out, in consequence of the obliquity of the wound causing it to act like a valve, so that at length the lung completely collapses, and the cavity of the pleura gets to be filled with air. Surgeons then direct us to close the wound and open a vein, in the hope that the air will be absorbed, as well as that the opposite lung may escape engorgement and inflammation. But the mechanism of the thorax and the principles of physics point to a very different practice, by the means of which we get rid of the air in the pleural cavity, and place our patient in a state of safety in the course of a few minutes. For this purpose we only require a canula and a bit of adhesive plaster. The former is to be inserted in the wound, and the patient directed to make forcible expiratory efforts, while he keeps his breath in by firmly closing his glottis, or his mouth and nostrils if he has no power over his glottis. In this way all the air in the chest would be equally subjected to pressure, while only that in the pleural cavity could escape, which it would do of course through the canula provided for its exit. Should the wound happen not to be valvular, the canula might be dispensed with, and the air simply expelled through the wound in the manner indicated. If the surgeon has reason to believe, from the fact that no more air escapes, although the patient continues his expiratory effort, that all the air has been expelled from the cavity of the pleura, he has merely to remove the canula and apply the plaster before the patient is permitted to desist from his efforts at expiration, and the cure is complete. If otherwise, he must apply his finger to the orifice of the canula while the patient inspires, in order to prevent the air gaining admission once more into the pleural cavity; and the next effort may complete the evacuation, when the canula must be instantly removed, and the plaster as quickly applied. The next inspiration will expand and fill the collapsed lung with air, provided the plaster has been properly applied, so as to prevent air once more passing through the wound; and, with a view to secure this in cases where the wound is large, it will be advisable to stitch it up, so as merely to allow room for the canula, and thus ensure its proper closure by the plaster. This mode of proceeding is not applicable, of course, to those cases where the pleura pulmonalis is also wounded, as air can, under those circumstances, find its way into the pleural cavity through the opening in the lung that establishes a communication between the cavity of the pleura and some of the bronchial tubes or the vesicles of the lungs. But it will be much more applicable to secure tapping in hydro-thorax, without risk of the entrance of air into the pleural cavity, than any of the ingenious pumps and other instruments invented for the purpose; and if the operator should wish to exclude any chance of the possibility of such an accident happening, he has merely to conduct the manipulations under water when the patient is immersed in a warm bath, and he can assure himself that he can with certainty effect his purpose. This suggestion was communicated about a year ago to a distinguished surgeon, who highly approved of it, and promised to apply it in the first case of the kind that would fall into his hands; but, as he has not yet had the opportunity of doing so, and as I know the method *must* succeed, I commend it to the consideration of surgeons who may have cases of hydro-thorax under their care, or who may before long meet with an instance of pneumo-thorax of the kind above described, with the request that it should be tried early, before the patient becomes too weak to make the necessary expiratory efforts.

I shall now proceed to examine other questions regarding the thorax and its diseases, as implied in the heading of this article; and, in the first place, the dilatation of the right side of the heart, met with in pulmonary emphysema, will occupy our attention for a short time. This, Dr Watson thinks, is due to obliteration of vessels in the affected portions of the lungs, which offers an obstruction to the pulmonary artery emptying itself of blood. But Professor Gairdner is of opinion that it is, like the emphysema itself, a result of the collapse of portions of the lungs, which necessitates the expansion of the heart and the cells of other portions of the lungs when the act of inspiration is performed, so as to prevent the formation of a vacuum,—atmospheric pressure being, according to Gairdner's views, the active producing cause of both. It will be seen that Dr Gairdner's views resemble those advocated in the first part of this paper regarding the seat of tubercle and pneumonia in the lungs, in so far as they are based on the conformation and mechanism of the thorax in conjunction with the principles of physics. It is probable that both of these eminent pathologists are right so far as they go, inasmuch as there is reason to believe that both of the causes mentioned are operating in the production of the fact under consideration; but I believe that a third, and quite as efficient a cause as either of the above, is concerned in effecting the heart's dilatation, and that before any of the others can take any part in the process. That Professor Gairdner's hypothesis is insufficient to explain it satisfactorily, is evident from the fact that his supposed sole cause operates equally on all the cavities of the heart, while the right chambers only suffer dilatation; for it cannot be supposed that this results from a difference in strength of the right and left chambers, as in other cases of disease where the causes are known to operate equally on both sides of the heart, the whole organ suffers dilatation; and, as if the difficulty were attempted to be got over by supposing that the weakest structures only become dilated, the right side of the heart even ought not to be affected, as the air-cells of the lungs are infinitely weaker than it, and consequently they ought all of them to be completely dilated before the heart shows any signs of giving way. While I admit that both of the causes advocated by Watson and Gairdner must necessarily be operating, I cannot help thinking that the facts point to the probability that the one advocated by the former is the more efficient of the two, as it explains why the dilatation is entirely confined to the right side of the organ in a more satisfactory manner than that of the latter. But the cause which I believe is more concerned than either of the above, is the primary and sudden collapse of portions of the lungs through the plugging of the air-tubes with inspissated mucus, and the consequent obliteration of so much of the channel through which the pulmonary artery empties itself, and thus a sudden distending force is applied to the interior of the right chambers of the heart, which, consequently, as I believe, suffer dilatation; for it is well known that the current of blood through the lungs is arrested whenever air is not freely admitted into the pulmonary vesicles. The vessels of such parts of the lungs become gradually obliterated, and it is this that Watson believes to be the cause of the dilatation of the heart. But we know that obstructions thus gradually formed tend to induce hypertrophy rather than dilatation of the heart, and hence I conclude that the latter result is due to the sudden arrestment of the flow of blood through portions of the lungs into which air cannot enter, in consequence of the plugging of the bronchial tubes in the manner described. We also know that the heart is most apt to dilate when a sudden onus is thrown upon it, when it is unprepared to overcome the obstruction thus suddenly offered. I hence suspect that the dilatation occurs to a great degree long before the vessels, through which the circulation has been suddenly arrested, have been obliterated by the process of absorption usually set up in useless structures in the body. Afterwards must come the causes, the claims of which are advocated by Watson and Gairdner, and probably they only help in the production of the cause in an inferior degree, and that only after another cause has commenced the process of dilatation; and which cause explains in the most satisfactory manner why the dilatation is confined to the right side of the heart.

In the second place, pneumo-thorax has been observed to occur so frequently in the Brompton Hospital for Consumption, that the physician of that establishment has come to regard it as a fourth stage of phthisis; but, in the Edinburgh Royal Infirmary, it is a very rare complication of that disease, and Dr Warburton Begbie explains the difference by supposing that in Edinburgh the holes in the pleura get to be plugged with lymph, or that adhesion of the pleural surfaces occurs more frequently in Scotland than in the south of England. The Scotch people certainly are more sanguine in temperament than the southern English, and, consequently, plastic effusion and adhesion of the two surfaces of the pleura may be more frequent in them. It appears to me, however, that the climate of

Scotland is more concerned in the production of this result than the temperament of its inhabitants; for I am not aware that it has been observed that persons of sanguine temperament are less subject to pneumo-thorax in the last stage of phthisis than their fibrous neighbours, or that Scotch residents in southern climes exhibit any superiority in this respect over the natives of such localities. But it may be that the equable and genial climate of the south of England enables its consumptive patients to survive till the pleura becomes the seat of tubercular cavities; while the damp, cold, and variable climate of Scotland causes death before this stage is arrived at. What has still greater influence, in my opinion, is the fact that the cold, damp, and variable character of the climate of Scotland causes phthisis to assume a decided bronchial form, in consequence of the irritation set up in the mucous membrane of the bronchia, in the air cells, and in the surrounding tissue, by the cold and moist air drawn into the lungs, from which it results that these parts are more prone to become the seat of tubercular deposition than the pleural surface, which is comparatively withdrawn from the injurious influences that act so directly upon the air-cells and bronchial tubes. Hence the bronchial character of phthisis in all cold, damp, and variable climates, as well as the beneficial effect of removing to more favoured localities. Hence the pleural surface is last affected in all climates, as well as the fact that, in warm climates, it is more frequently affected than in cold ones, for the simple reason that, in warm climes, there is absence of any special irritating cause to produce the deposition of tubercle around the air-cells and bronchial tubes, and thus the deposit takes place more equably throughout the whole lung. Hence, too, why even in cold countries those who avoid exposure wither away slowly without much cough or bronchial irritation; while the poor, and others who are forced to expose themselves, suffer greatly from bronchial attacks and cough during the rapid and formidable course of the disease, and while the poor of warm climes are less troubled in this respect than sufferers in cold, moist, and variable climates.

To turn our attention to another point connected with phthisis, it has been shown by Professor Bennett that tubercle corpuscles are imperfect cellular formations, and that they consequently possess a vitality of their own. This explains the fact, regarding the existence of which there can now be no doubt, that tubercles, for the most part, begin to undergo the process of softening at the centre, and that the softening then gradually spreads circumferentially; for tubercles augment in size by the accretion of similar matter at their surfaces, and as the materials thus added from a centre towards a circumference possess a vitality of their own, they must, in common with all other living structures, retain that vitality for a certain definite space of time. Consequently, when the time comes for tubercle corpuscles to die, break down, and liquify, so as to constitute the process of softening, this begins of course in the centre of the mass, as it is there that those corpuscles exist which were first formed, which have enjoyed the longest life, and which, for these reasons, are first to arrive at the period of their existence. Then follows the softening of the corpuscles situated in their immediate vicinity; and thus the process extends circumferentially, until large holes are excavated in the lungs. Two such extending vomicæ meeting will open into each other, so as to form a larger and irregular cavity. So far the process resembles the production and growth of fairy rings in pastures, or of skin diseases depending on vegetable parasites. In all these cases the phenomena are due to the presence, reproduction, and death of living organisms.

Again, it has been observed that in the first stage of phthisis, before any other marked symptoms exhibit themselves, the patient experiences a few dry coughs regularly every morning as soon as he turns out of bed and exposes his skin to the chilly air. This, I think, is a result of that reflex inspiration which invariably occurs whenever cold is suddenly applied to the skin, the original purpose of which, as we shall afterwards see, is in all probability to establish the process of respiration the instant a young mammal is born, as well as to lessen his specific gravity, so as to enable him to swim, if by accident he should happen to fall into water in after life. In the early stage of phthisis, the tubercular matter is not present in sufficient amount to prove irritating enough to excite cough of itself; hence cough is absent throughout the day, and is only excited when something in addition to the tubercular matter is present. This is supplied in the morning on the patient first exposing himself to the cold air, by that exaltation of the nervous system of the respiratory organs which always occurs when the skin is suddenly chilled, and which leads to that abrupt gasping for breath always experienced under these circumstances. This exaltation of the nervous centre of respiration and the resulting reflex inspiration that occurs on leaving the warm bed in the morning, disturb the parts sufficiently to cause them to be sensitive enough to the irritation of the tubercular matter, and a few dry explosions of cough are the result, the import of which is sufficiently known to all physicians who have paid attention to diseases of the chest. In subsequent stages of the disease, the increased amount of tubercles and the presence of matters to be expectorated prove sufficiently irritating to cause almost constant cough, and that independently of any exaltation of the nervous centres; but the depression of the latter during sleep arrests the coughing and leads to the accumulation of matters to be expectorated, and the instant the patient wakes and exposes his arms and breast to the air, that exaltation of the nervous system returns, the patient is convulsed with cough, and thus gets quit of the refuse of the disorganizing process going on in his lungs that would otherwise accumulate and suffocate the unfortunate sufferer. The object of this reflex cough is therefore beneficial, although it, like other reflex acts, becomes excessive and pernicious in disease.

So is reflex inspiration purposive and beneficial; it produces our first inspiration, and if the stimulus of the air is insufficient for this, we have but to use cold water to secure gasping and forcible inspiration, and at the same time to convince ourselves that our theory is correct; it inflates the lungs and renders us buoyant whenever we unexpectedly fall into the water. We make use of this reflex act in cases of poisoning with hydrocyanic acid, etc., to produce the same result, when the respiration begins to flag; and there can be no question that, so long as the patient continues to respond in this manner to the sudden application of cold to the skin, this is the best method of clearing the lungs of noxious gases in cases of mephitism.

I shall bring these remarks to a close by making a few observations on two suggestions that have been thrown out with a view of checking the ravages of pulmonary consumption and other forms of scrofula, or of eradicating the evil from amongst us; for I believe that neither of them are calculated to effect so desirable an end; and one of them, so far from operating as a preventive, actually tends to perpetuate the scourge, as well as to extend its sphere of action, by introducing it into families hitherto free from all taint. One of these is the proposal of Ancell, in his able work on tuberculosis, that all scrofulous persons should be prohibited to marry by legislative interference, through which, he believes, it is possible to exterminate the race of scrofulous subjects from the face of the earth. The other piece of advice has (like the instructions to bleed, salivate, and blister, in spite of the teachings of more advanced and correct pathology in recent times) so long disfigured the pages of our text-books on the practice of medicine, that I am unable to ascertain who was the first to recommend it. I allude to the advice usually given to scrofulous persons never to marry individuals in the same predicament as themselves, but to secure a partner who is absolutely healthy, if they possibly can. This, as I shall afterwards point out, is just the proper way to perpetuate scrofula, and to disseminate it where previously it had not obtained a footing.

With reference to Ancell's proposal, I need not say that anything of the kind would never be tolerated in this or any other civilized country. Who was to judge of people's constitutions if it were? For Professor Syme finds that nearly all persons are of opinion that everybody is scrofulous with the exception of themselves and the members of the family they belong to. Even physicians and learned doctors are often captivated by the graceful outlines of the figure, the charming tints of the surface, and the sparkling intellect of fair but scrofulous young ladies. Hence Ancell's proposal, if it should ever become law, would prove utterly impracticable, even if the class against which it is directed loyally submitted to the operation of the statute, which is a thing that no class of persons would be good-natured enough to do. But, strange as it may appear, Ancell's law actually exists, and governs the reproduction of all animals, man not excepted. For it is a wise law of nature that healthy life only is permanently reproduced; and this is the effect of the operation of the law in the animal kingdom, although civilized man has decided that it shall only operate in a modified form so far as he himself is concerned. For it is in order to keep Ancell's law in operation that the pugnacious instinct is developed in all male animals, even in the innocent dove, during the breeding season: the fearful combats this leads to result in the triumph of what is termed brute force, and hence the weak and diseased males are driven from the herd, or lose the partners they fought for, if not polygamous in habits. If such weak males are not courageous or cunning, they have no chance of taking any part in the reproduction of their species. Strength, courage, and cunning are almost essential to all animals, and consequently those individuals which possess neither are not reproduced; and if they happen to fall in with weak females that are drawn from or fail to keep up with the herd, their weak offspring speedily disappear. There can be no question, therefore, that the results of the law are beneficial, inasmuch as it tends to render extinct all animals wanting in health, strength, courage, or cunning. Hence man rigorously applies it to the lower animals which he has domesticated for his own use; he always reserves good stock to breed from, and speedily parts with any individuals that may show signs of weakness or disease. He even forces it upon the members of his own family so long as they remain under his control: no parent, so long as he can help it, permits his son or daughter to marry any member of a family with distinct traces of hereditary disease in it. I grant, therefore, that the efficient working of Ancell's law would prove highly beneficial as regards civilized communities, only I deny that it could be worked at all. Man may and does enforce it upon his sons and daughters, but to apply it to his fellow-citizens in the offensive form of a legislative enactment is a very different thing, and would be certain to be resented by those against whom it is directed: in other words, the oppressed would not fail to display pugnacious propensities just in the same way that the lower animals do under similar circumstances. But as the march of civilisation and modern ideas have decided that there must be elements in government besides might and rights in addition to those of conquest, we must drop the project of an Ancell's law, since we cannot have the combats it would give rise to. In ancient times, however, the law existed amongst the Jews, and it now exists in a modified form in the more tyrannical of barbarous and civilized family circles. Ancell wants to put a stop to all marrying among scrofulous persons; but the efforts of individuals are confined to the endeavour to exclude all except the healthy from marrying members of their families, which tends to compel the diseased to marry the diseased; and it is the same, as we saw before, among the lower animals. This is all we can legitimately do; and, indeed, it is our duty to prevent the diseased marrying the healthy, in so far as it is in our power to do so. These considerations point out how an autocrat ought to proceed if it should ever enter his head to banish scrofula from his dominions by legislation, as Ancell's method of preventing scrofulous persons marrying at all could never be carried out. If an edict were issued to the effect that the scrofulous must not marry the healthy, but seek partners of the same diathesis as themselves, the result of the efficient operation of the decree would be that, in the course of time, the offspring of such marriages would gradually die out, and leave a comparatively healthy population behind. For in this manner a race of scrofulous men would spring up, only to deteriorate, however, more and more in each successive generation, until they gradually became extinct, no less by their diathesis and diseases becoming more and more inveterate, than by the operation of the decree in preventing the infusion of new and healthy blood into their ranks. Such a race of men would have no chance to compete with their more healthy neighbours with any prospect of success in the struggle for existence.

Lastly, we have seen that it is a wise law of nature that healthy life only is permanently reproduced, and that to secure this end pugnacity is developed in animals during the breeding season, in order to prevent the weak and diseased taking part in multiplying the individuals and reproducing the species. Healthy men, too, always try to prevent the unhealthy effecting a matrimonial union with them. Still we find writers on the practice of physic advising the very reverse of this with a view of preventing the disease! They advise the diseased by all means to marry the healthy. This, of course, as the above considerations prove, not only tends to perpetuate scrofula, but also to extend its limits by introducing it into healthy families. "It would be well," says Watson, "for society if the multiplication and diffusion of the strumous diathesis could be checked by a prudent avoidance of ill-assorted marriages." Yet he recommends the very marriages that are calculated to mutiply and diffuse it, and laments that "on these points our advice is seldom asked." When the counsel that is forthcoming is so decidedly bad, I think it is very fortunate that we are seldom resorted to for it. As we saw before, advising the healthy to marry the healthy and avoid the diseased, and allowing the latter to intermarry, is the proper way to eradicate the evil from society, and this is the method nature employs in the multiplication and reproduction of animals with a wise and beneficial object in view. In recommending the scrofulous to marry the healthy, we are doing what is at once a gross wrong to the latter (and more valuable of the two lives), as well as what is most prejudicial to the interests of the species; while the benefit to the former is absolutely nothing, and the benefit to the offspring is of a very questionable nature, since it consists in the prolonging of a miserable and painful existence. Hence I have always advised the healthy never to marry the scrofulous, and I shall never, therefore, be guilty of the inconsistency of advising the latter to marry the former. Would any of us doctors like to see a son or brother married to a girl in the first stage of consumption? Then let our counsel in such cases be what justice commands, what science teaches, and what the interests of society and the welfare of our species claim from our profession.

ARTICLE VII.—*Note on Uterine Metrology.* By J. MATTHEWS DUNCAN, M.D., etc.

THE external superficial area of the unimpregnated uterus has been measured by Levret. In his Art des Accouchements,[1] he describes it as having 16 inches, or nearly so, of surface. I am not disposed to enter on any minute criticism of Levret's measurement; only, I may say, that it appears to me to be excessive. A length of 3 inches and a breadth of 2 is more than the full superficial dimensions of the uterus externally; and this gives, in a flattened pyriform organ, a surface of about 12 square inches.

The superficial area of the internal surface of the cavities of the unimpregnated uterus has not been measured. Indeed, it is almost impossible to do so. It may be estimated roughly, and perhaps rather in excess, from Guyon's moulds, that the superficial area of the cavities of the uterus is from 1 to 2 square inches, and that of the body alone (exclusive of the cervix) from ½ to 1⅓ square inch.

The capacity of the unimpregnated uterus has been carefully measured by Levret, Krause, Dubois, and Guyon. Levret[2] estimates it at 11/14 of a cubic inch. Speaking of the capacity of the nulliparous uterus, M. Guyon remarks,[3]—"We have tried to utilize the solidifying injections for the study of the capacity of the cavity of the uterus; we have, with this view, plunged the moulds alluded to into a graduated test-glass containing pure water. Their capacity, valued as exactly as possible, is from 3 (⅕ cubic inch) to 5 cubic centimètres (⅓ cubic inch). (This last figure applies only to very large cavities.) Thus we come very near the estimate of Professor Dubois, who fixes this capacity of the cavities at 2 (⅐ cubic inch) or 3 cubic centimètres (⅕ cubic inch). Krause, therefore, has exaggerated this capacity in making it in the virgin from 1½ to 2 cubic inches.[4] The same exaggerated estimate is again made by this author for the capacity of the cavities of multiparous uteri, which we shall presently consider." In another place, M. Guyon remarks[5],—"The capacity of the cavities of the multiparous uterus has varied, in our experiments, from 5 to 8 cubic centimètres ($\frac{1}{3}$ to $\frac{1}{2}$ cubic inch). The figure 5 refers to two cavities, whose diameters gave the medium measurement that we have shown; the figures 7 and 8 refer to our other experiments, having thus for their subject large cavities, surpassing the medium size. We are, therefore, of opinion that the capacity of the cavities of the multiparous uterus should be valued at from 5 to 6 cubic centimètres" ($\frac{1}{3}$ cubic inch).

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[1] Edit. 1761, p. 299.

[2] *Loc. cit.*

[3] Journal de la Physiologie. Paris, 1859, p. 215.

[4] Encyclopédie Anat., t. v. p. 143.

[5] *Ibid.*, 402.

It would be a work of over-refinement to measure separately the external and internal superficial areas of the walls of the uterus in advanced pregnancy, because of the great variations in size of different organs, and because of the variations in size even of the same replete organ under different conditions.

The foundation of such measurements is the estimate of the average linear dimensions of the full-sized gravid uterus, that is of an organ having a more or less perfect ovoid shape. Now, the best authorities have varied considerably in their statements of such average measurements.

Velpeau[1] has the following:—"It is said that at the full time, the vertical diameter of the uterus is 12 inches, the antero-posterior 9 inches, and the transverse $8\frac{1}{2}$ inches. In three women, dead at the full time, before the rupture of the membranes, I have found twice 15 inches, and once 13 inches in the great diameter; once 8 inches and twice 10 inches from before backwards; twice 11 and once 9 inches transversely. At the height of the tubes its circumference is about 26 inches, and only 13 inches at the level of the uterine portion of the neck."

Churchill[2] describes its length as "being from 12 to 14 inches, its breadth from 9 to 10, and its depth, antero-posteriorly, from 8 to 9 inches."

Tyler Smith[3] says:—"At the end of gestation, the uterus is about 13 inches long by 8 or 9 in breadth,—its greatest antero-posterior diameter being 8 or 9 inches."

Dubois and Pajot[4] have the following:—"The uterus, in the state of vacuity, presents some slight variations in dimensions, and the measurements of it tend rather to rise above the average than to sink below it. During pregnancy, and especially at the full time, the uterus offers differences still more numerous; thus, whilst some observers have found uteri at term whose great diameter rose as high as 405 millimètres (16 inches), others have only found from 320 to 370 millimètres (13 to 15 inches), including the fundus, body, and neck." "Here are the averages which seem to us to approach nearest to the truth. For the vertical diameter, or the greatest length of the organ at the full time, 375 millimètres (15 inches); the transverse diameter in the broadest part 264 millimètres ($10\frac{1}{2}$ inches); and the antero-posterior diameter, at the greatest thickness, about 244 millimètres" ($9\frac{3}{4}$ inches).

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[1] Traité Complet de l'Art des Accouchements. Bruxelles, 1835, p. 114.

[2] Theory and Practice of Midwifery, 1860, p. 92.

[3] Manual of Obstetrics, p. 184.

[4] Traité Complet de l'Art des Accouchements, tome i., livr. 2me., p. 374.

"Finally, the extent of the circumference of the organ, taken at the height of the tubes, is 70 to 73 centimètres (28 to 29 inches) on an average; and that of a smaller circumference measured about 12 centimètres (5 inches) above the external orifice, is nearly from 34 to 38 centimètres" (14 to 15¼ inches).

Poppel[1] takes from Gassner the weight of the contents of the uterus as in round numbers 5 kilogrammes (10 lbs.), and as the specific gravity may be taken as nearly that of water, the volume will be 5 cubic decimètres (300 cubic inches). The diameter of a sphere of this volume is thence calculated as 8⅓ inches.

In calculations to be afterwards given, I assume the bulk of the uterus to be that of a prolate spheroid 12 inches long by 8 inches across. This assumption is made, to some extent, capriciously or without exact grounds. It is done to enable other calculations to be made which are impossible in an unsymmetrical ovoid figure, but, to the mathematician, easy in the case of the figure assumed.

The superficial area of the uterus at the full time has been estimated by Levret at 339 square inches.

Poppel estimates it at 1358 quadratcentimètres, or 210 square inches, founding on the measurements above given.

Founding in like manner on the measurements of the prolate spheroid above given, the superficial area is found to be 250 square inches.

The formula for this calculation is,[2]

$$\frac{6\cdot283}{e}24\left\{\text{Sin.}^{-1}e+e\sqrt{1-e^2}\right\}$$

where e, the excentricity of the assumed elliptic section is given by

$$e^2=\frac{6^2-4^2}{6^2}=\frac{5}{9}.$$ (*Gregory's Examples*, p. 438.)

The capacity of the gravid uterus at the full time is given by Levret as 408 cubic inches of water, which makes 17 lbs. in all, including the infant, the waters, the placenta, and its membranes.[3]

Poppel makes the capacity to be 5 cubic decimètres, or about 300 cubic inches, as already above described.

Supposing, as we have done, the volume of the gravid uterus at the full time to be equal that of a prolate spheroid of 12 by 8 inches, this gives the cubic contents as 400 cubic inches.

We have assumed that the surface of the gravid uterus measures 250 square inches. Now, as I have shown in another paper[4] that the effective pressure in ordinary labours per square inch varies from about 2½ lbs. to ¼ lb., it follows that the whole internal pressure on the uterus varies from 625 lbs. to 62½ lbs.; or, if the pressure rises to its highest, then it is about 1300 lbs.

Poppel's mean estimate of the same pressure is 313 kilogrammes (670 lbs.).

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[1] Monatsschrift für Geburtskunde, etc., 21 bd., 1863, s. 8.

[2] I am indebted to Professor Tait for this and other contributions to the paper.

[3] The difficulty of reconciling this with the weight of the contents is pointed out by Velpeau (*loc. cit.*).

[4] Trans. Roy. Soc. of Edinburgh, vol. xxiv., 1867.

Part Second.

REVIEWS.

Transactions of the Pathological Society of London. Volume Seventeenth. London: 1866.

We are always glad to take up a new volume of the Transactions of the Pathological Society, as we are certain to find in it a large amount of interesting matter. The cases recorded, as well as the style of publication and illustration, are in the highest degree creditable to the Society. The present volume is, if possible, an improvement upon its predecessors. It contains reports of between two and three hundred morbid specimens, illustrated by seventeen plates and thirty-seven wood-engravings.

Injuries resulting from railway collisions have recently attracted much attention. The lesions are often very obscure, and there is no doubt that there is a great temptation to exaggeration on the part of the sufferer. We do not recollect to have previously met with an account of the post-mortem appearances in any of these cases. We are glad therefore to find recorded in the Transactions of the Society a description of the condition of the brain and spinal cord, by so able an observer as Mr Lockhart Clarke. The patient, a gentleman 52 years of age, was injured three and a-half years before his death by a railway collision. There were no visible injuries, but immediately afterwards he began to suffer from vague pains, not of a very acute character, in the back and head. A gradual failure in his physical and mental faculties took place; he lost the power of locomotion, and for the last month was confined to bed. His speech, for some weeks before his death, was thick and hesitating. There was also irritability of the bladder, terminating in incontinence of urine; while the urine was pale, turbid, and alkaline. On post-mortem examination, the cerebral arachnoid was found slightly opaque, and there was sub-arachnoid effusion. The cerebral substance of the brain was pallid and soft; this was particularly the case in the under surface of the anterior lobes on both sides. The membranes of the spinal cord were in some places thickened, in others adherent. One of the most striking changes in the cord was a diminution of the antero-posterior diameter, which in many places was not more than equal to half the transverse. This was particularly the case in the upper portion of the cervical enlargement. On making sections, Mr Clarke found that of all the *white* columns, the *posterior* were exclusively the seat of disease. "These columns were darker, browner, denser, and more opaque than the antero-lateral; and when they were examined, both transversely and longitudinally, in thin preparations under the microscope, this appearance was found to be due to a multitude of compound granular corpuscles, and isolated granules, and to an exuberance of wavy fibrous tissue disposed in a longitudinal direction. It was very evident that many of the nerve-fibres had been replaced by this tissue, and that at certain spots or tracts, which were more transparent than others, especially along the posterior median fissures, they had wholly disappeared. Corpora amylacea, also, were widely interspersed through the same columns, particularly near the central line. The extremities of the posterior horns contained an abundance of isolated granules like those in the columns; and in some sections the transverse commissure was somewhat damaged by decentipation. The anterior cornua were decidedly smaller than natural and altered in shape, but no change in structure was observed." Mr Clarke points out the striking resemblance between this case and cases of locomoter ataxy, with regard to the limitations of the lesion of the white substance of the cord to the posterior columns, although the nature of the lesion was somewhat different; and he found on inquiry of the patient's medical attendant, that "the semi-paralytic state was precisely that of unsteadiness, somewhat like that of partial intoxication; but, on the other hand, there was very little, if any, jerking or twitching."

The case is a very important one, as showing that great disorganization of the nervous matter may be the result of a shock, although there has been no external injury.

The only other case to which we can allude is one which occurred in the practice of Mr Bickersteth of Liverpool, and which was communicated to the Society by Dr Murchison. At the age of 14, the bones of the patient's face were noticed to become enlarged, and the swelling went on increasing till the time of his death, twenty years afterwards. Seven years before his death, a similar hard swelling appeared along the course of the left fibula. The swellings at first caused little inconvenience, but for the last two years he suffered from severe pain in the head, but particularly in the leg, so that the patient got into the habit of taking large quantities of laudanum. The patient died, worn out by emaciation and protracted suffering. The only bones affected were those of the cranium, the hyoid bone, and the left fibula. With the exception of the occipital, all the cranial bones were involved; they were greatly thickened and indurated, this condition being chiefly due to the growth from the outer surface of numerous, closely aggravated, smooth, dense, botryoidal excrescences, varying in size from a hemp-seed to a small cherry, and causing the bone to resemble somewhat a mass of malachite. The change was most remarkable in the malar bones; these were developed into dense globular masses the size of an orange, and with a botryoidal surface. On microscopical examination, the compact structures of the thickened and indurated bone were found transversed by large vascular canals, which formed in some places a close net-work. The spaces between the canals were filled up by bone tissue of ordinary character. The laminæ were numerous, but small, and for the most part elongated. There were very few traces of Haversian canals. On analysis, the organic matter of the growths was found to be slightly in excess of the normal amount.

Physiological Remarks upon the Causes of Consumption. By VALENTINE DUKE, M.D. Dublin: Fannin and Co.: 1867.

On Diseases of the Respiratory Passages and Lungs. By WALTER GOODYER BARKER, M.B. London: J. Churchill and Sons: 1866.

On Consumption and Bronchitis. By JAMES COPLAND, M.D., F.R.S., etc. London: Longmans, Green, and Co.: 1866.

Change of Air in the Treatment of Consumption and Chronic Disease. By J. C. ATKINSON, M.D. London: Trübner and Co.: 1867.

IT must be admitted that within the last few years great progress has been made in sanitary science, and through the operation of judicious legislative enactments, carried on under the supervision of our medical officers of health, the spread of disease has been arrested, its ravages abated, and its mortality diminished. But there still remains much to be accomplished, chiefly in the way of educating the people in the great laws which regulate life and health. On this subject, gross ignorance at present prevails; and until a knowledge of the supreme value of pure air, wholesome food, cleanliness, and other hygienic conditions, be widely diffused amongst the public, we fear that all efforts for the eradication of those maladies which annually, in this country, sweep so many thousands into untimely graves, must prove fruitless and unavailing. The chief of those diseases is undoubtedly pulmonary consumption, an affection which, from the earliest ages, has committed sad havoc in the world, and has latterly become so prevalent in this country, that on the Continent it is known by the name of "The English Malady." But such is the hardening influence of a long-continued familiarity with any evil, that in course of time we become careless of its consequences, and our efforts for its mitigation or total abolition grow gradually feeble. So has it been with phthisis; and although yearly the number of its victims is enormous, and there is hardly a family in the land whose circle has not been broken by its inroads, we have nevertheless got so accustomed to its ravages that we are inclined to fold our arms in inactive resignation, and accept them as afflictions which are unavoidable. One cause which has operated largely in producing this state of callous indifference is, no doubt, the utter impotency of medicine to cure the disease. It is certain that, up to the present hour, no remedy has yet been discovered; and the agents in daily use in the treatment of consumption must be regarded simply as palliatives, and nothing more. We may, by a judicious diet and regimen, by cod liver oil and the selection of a suitable climate, in many cases prolong life and add much to the comfort of the patient; but can we by any means eradicate or cure the disease? We suspect we must honestly answer, No. Seeing, then, that in the meantime we cannot cure this dreadful scourge, is there anything we can do to prevent it? We believe there is; and in this notice we intend to confine our remarks to the question, as to what the avoidable causes of pulmonary consumption are, and how they may be prevented?

Dr Valentine Duke, the title of whose work stands first on the list at the head of this review, a gentleman who has had a large experience in the management of the consumptive, holds "that hereditary predisposition is in its nature the only perfectly unavoidable cause of consumption," and that even in regard to it much may be done in mitigation of its tendencies and effects. But the causes which Dr Duke regards as the most potent in the induction of that cachexia which always precedes consumption,—causes over which we have comparatively perfect control,—are the following: want of an abundant supply of pure air, an insufficiency of wholesome food, excess in eating and drinking, neglect of bodily exercise, neglect of cleanliness, want of proper clothing, and mental distress. Now, these are causes which result in many other forms of disease besides phthisis; and, as we before observed, it is only by enlightening the people as to the evils of such influences that we can hope to reduce the death-rate of the country. The author's remarks on the prejudicial effects of over-eating are well worthy of notice; but we will merely glance at his views on ventilation, the neglect of which he holds to be the chief of the avoidable causes of consumption. This is a subject of immense importance, and one upon which much more attention might be bestowed, not only by private families, but by public bodies. In our own city, the system of ventilation in many of the public halls is wholly imperfect and inadequate; and the state of the atmosphere in some of them where gentlemen are called upon, in the exercise of their vocation, to spend the greater part of the day, is such as must exercise a most injurious effect upon the health. So is it in our over-crowded workshops, where the dressmaker, the shoemaker, and the tailor, in constrained positions, are called on to work for many successive hours in a depressing and impure atmosphere. It is the imperfect ventilation and the respiration of unhealthy air, as Dr Duke remarks, more than any inherent unwholesomeness in their respective occupations, which shortens the existence of such persons, and exposes them to the ravages of consumption. Then, in regard to our dwelling-houses, how very few of them are constructed so as to admit of thorough ventilation! The great majority of the windows, while they may be opened from below, will not come down from the top, and hence the air of our rooms cannot be thoroughly changed. Hear what Dr Duke says on this subject: "Let it be remembered that one inch of window open at top is more efficacious than a foot or more at the bottom. This want of ventilation exists in bedrooms more especially, if not in the most sensible degree, at least with the power of producing the greatest amount of mischief. Ninety-nine-hundredths of civilized mankind pass the *third part* of their entire lives in their sleeping apartments, and in ninety cases of every hundred these rooms are kept during that time with perfectly closed doors and windows. Can circulation of air, sufficient for the security of health, be maintained by its scanty admission through a key-hole, and its escape through the chinks of window sashes? It is not an exaggeration to assert that millions of persons are thus shut up in their bedrooms for eight out of every twenty-four hours, and frequently much longer, without any further provision for ventilation; and the observation of every medical man will bear me out in the statement, that in numerous instances even the change of air which would thus be permitted is prevented by the careful pasting over with paper or stopping with listing any ill-fitting door or window; and very many bedrooms are provided with a board to be placed closely against the fire-place in the summer season, to prevent draught, forsooth! What are the consequences of such short-sightedness and insanity? The unfortunate occupants of these chambers retire to rest with a supply of fresh air sufficient only for a short period; this soon becomes exhausted, and they continue during the remainder of the night breathing over and over again the same vitiated air, which is becoming momentarily worse; and thus they are soon literally plunged in a vapour bath of impurities, the result of ignorant folly and the creation of their own necessities. Hence the languid, unrefreshed sensation so constantly experienced upon awakening; hence the disinclination to arise and enter upon the duties of the day; hence the headache, the want of appetite, the pallid face, the sunken eye. Such habits, practised for even a short period, are injurious; when long continued, they do greater mischief; and when persisted in, lay the foundation of disease, undermining and weakening the strongest constitutions." We have quoted this passage because we believe with the writer, that the subject of ventilation is not understood even amongst the better classes, and there cannot be a doubt that the habitual respiration of impure air must be productive of very great evil, especially amongst those who are predisposed to tubercular disease. Dr Duke's little book is indeed full of sound advice, founded upon physiological principles, and is well worth perusal, not by the profession alone, but by all those who are so situated as to be in a position to exercise an influence for good on their fellow beings. To the attention of all in authority, to the employers of labour, to schoolmasters, and others who have charge of young people, we earnestly commend this volume.

Dr Barker's work is the production of a physician who for a lengthened period has given his attention to the diseases peculiar to the air passages and lungs, and who seeks in this treatise to impress upon the profession the importance of *atmospheric vicissitudes* as a source of disease. We have not space to follow the author through all the chapters of his very interesting book, and will confine our remarks to that section which treats of Phthisis Pulmonalis. Like Dr Duke, he attaches much weight to the influence of imperfect ventilation, especially in dormitories, as a cause of consumption; to improper food; and, amongst females, in which sex, he tells us, phthisis invariably predominates in agricultural districts, to want of exercise in the open air. As a preventive measure, in persons who are predisposed to the malady, Dr Barker has great faith in change of air, and is of opinion that the benefit to be derived from this treatment depends entirely upon the difference between the relative constituents of the atmosphere of the place where the person has resided and the one he has selected. He believes, further, that for the prevention of consumption a moderately cold climate is the most useful. The climate of his own locality (Worthing), where the prevailing winds are from the south-west, and the atmosphere is mild during winter, he believes is admirably adapted to weak chests. The hereditary disposition to this disease, he thinks, might be very greatly diminished by the prevention of marriage amongst those who are unhealthy, and is of opinion that parents and guardians might do much more in this way to prevent the transmission of pulmonary disease.

Dr Copland's work on Consumption, of which this is a new edition, is a comprehensive and exhaustive volume, giving the views not only of the author himself, whose large experience gives authority to his opinions, but of all the leading physicians who have investigated the subject. His observations on the causes of the disease are especially full and interesting, but we shall only mention one of the many to which he alludes. Undoubtedly one very powerful influence in the production of the disease, the author says, is the habit of mothers who are predisposed to phthisis nursing their children, a practice which is extremely common in this country, not only amongst the poorer classes of society, but amongst those who ought to know better. The evil of this consists not only in the administration to the infant of unwholesome milk, but in the exposure of the child to the risk of infection from the mother's emanations from the lungs and skin. Dr Copland states it as the result of his observation and experience, that pulmonary disease may be communicated in this manner, especially in young persons of a scrofulous diathesis. He consequently points out the danger of permitting persons under the age of puberty to sleep with those who are suffering from consumption. The question of infection in phthisis is one of those numerous subjects in medicine which still remain in dispute; and while we cannot yet admit that the disease is propagated in this way, we are nevertheless disposed to give to this distinguished writer's opinions that consideration to which they are justly entitled. In order to prevent the development of tubercular disease in the offspring of those who are tainted with scrofula, Dr Copland counsels great care and attention during the early years of life. "Change of air," he says, at p. 179, "or the migration from one locality to another, according to the circumstances of the case, the age of the patient, and the season of the year; removal from crowded towns or situations to a high, dry, and temperate locality; residence near the sea-coast, in a temperate and dry air, and on a gravelly or sandy soil; sea-voyaging in some cases; sleeping in large, airy chambers; exercise in the open air; the enjoyment of light and sunshine during the waking hours, and limiting sleep to the hours of darkness, are generally of great service, especially in advanced childhood, and during the progress of puberty. Cold bathing, particularly sea-bathing, the Turkish bath, active friction of the surface, a generous diet, with a due proportion of animal food, and regular meals, are also most beneficial in the early periods of life. Whilst these means are pursued, the digestive and assimilative functions should be promoted, whenever they are insufficiently performed, by sulphureous and chalybeate waters, especially those of Harrogate, both internally and externally; by stomachic and tonic aperients, as the compound decoction of aloes, with the compound steel mixture, or the compound infusions of gentian and senna; and the use of unnecessary stimuli or stimulating beverages, of pork and indigestible meats, of sugar and saccharine substances, should be avoided." Here is a very complete and excellent code of regulations; although, unfortunately, many of the measures recommended are only within the reach of the affluent, and beyond the means of the poor, the very class in which scrofulous and phthisical children are so numerous. We who have been trained to regard the administration of fatty and oily substances as of the highest consequence in the treatment of tubercular diseases, are a little astonished at the prohibition of pork and saccharine matters contained in the close of the paragraph just quoted, and would be inclined to take exception to this portion of Dr Copland's otherwise sound advice.

The evils of a constant and protracted residence in crowded towns, with its late hours, unnatural excitements, mental anxieties and fatigue, the breathing of air contaminated by sulphurous and other gases, by animal and putrid effluvia, and by noxious exhalations, —all which are sooner or later followed by etiolation, blanching, anæmia, and cachexia,—the author points out and shows the beneficial result of a change to the sea-side, where the inhalation of pure oxygen checks the advance of disease, and imparts new vigour to the constitution. The importance of such changes in the prevention of disease of all kinds, and of consumption too, cannot be overrated.

Physicians are very frequently consulted as to the propriety of persons who are threatened with phthisis entering into the married state; and as this is a question of great importance in regard to the prevention of consumption, we shall briefly notice Dr Copland's views on the subject. Such an inquiry, he thinks, may be confidently answered in the negative; believing that, in most cases, where the *male* is predisposed, though he marry a female of the proper age and most healthy constitution, he will nevertheless most likely have a family highly predisposed to this malady. The same results, he believes, follow when the predisposition exists in the *female* parent. At page 182 he remarks,—"Consumptive persons who marry, are even more culpable in this than those who are imbued with the scrofulous diathesis, or who have been affected with external tuberculosis. The offspring of the former may be scrofulous, but the taint is more likely to be manifested in the form of tubercular consumption; whilst the offspring of the latter are more liable to external tuberculosis, although they may be attacked with phthisis, especially when the external malady has not occurred." No doubt much might be done to prevent consumption, if those who knew themselves to be affected with the disease, or had a strong tendency to it by inheritance, were to remain in celibacy; but, unfortunately, unions are too often arranged and completed without any consideration of the consequences. And when such persons do consult the physician as to the propriety of marrying, it will generally turn out that, before seeking his advice, they have already made arrangements for entering into the connubial state.

The beneficial influence of change of air in arresting the progress of consumption, chiefly in its early stages, is universally acknowledged; but it must be admitted that physicians are too much in the habit of recommending this merely as a matter of routine, or as a *dernier ressort* when all treatment has failed. Dr Atkinson has written a little treatise on this important subject, to which we would now briefly allude. The style of the Doctor's composition is in the highest degree "spasmodic;" there is a great want of arrangement in the contents, and there is not even an index to the book. But after patiently wading through its pages, which are filled with highly-coloured descriptions of scenery, poetical quotations, and almost every subject but the one the author has proposed to discuss, we at last make out that, in his opinion and according to his experience, "change of air" is much more frequently productive of evil than of good, chiefly on account of the indiscriminate manner in which the remedy is prescribed. By what means, then, may practitioners ascertain the locality most suitable to the condition of their patient? By the character of the pulse, Dr Atkinson says; and therefore "it is incumbent on the medical practitioner not to advise convalescents change of air to any place or locality where, from natural circumstances of position, an increased pulsation is likely to be acquired, knowing full well that whatever tends, even in the slightest degree, to add, by stimulating action, an increased pulsating power in the system in diseases of the chest, will assuredly contribute to diminish the period of existence." Sea air, impregnated as it is with saline matter, iodine, bromine, and other matters, he believes to be beneficial to patients suffering from scrofula; but for those labouring under consumption he thinks an inland, low-lying plain or valley, in which the atmosphere is mixed with gases of different kinds, is better suited. The indication in consumption, he holds, should be to diminish the action of the arterial system by depressing the pulse to a moderate standard, and this result may be obtained in many cases by placing the patient in such a locality as that described, where the atmosphere is moist and humid. These views certainly differ from those entertained by most physicians,; but Dr Atkinson has devoted many years to the subject, and his opinions are entitled to attention. We must acknowledge that very great ignorance still prevails in the profession, and amongst the public, as to the relative value of the various health-resorts, and we quite agree with the following observation, that—"In recommending 'a change,' one or two seasons must not be taken as the average climate of a spa or watering-place. Meteorological observations, to be depended upon, ought to be taken for twenty years at least in many minute points, and especially as regards barometric and thermometric readings."

We have thus merely glanced at some of those causes which undoubtedly tend to promote the prevalence of consumption, and at a few of those measures which, if enforced, would decidedly exercise an influence for good in arresting the ravages of this fearful scourge. So long as the mass of our population remain in utter ignorance of the very first principles of life, and so many thousands of them continue to live in insalubrious homes, breathing impure air, consuming unwholesome food, and indulging in ruinous excesses, we can expect no abatement of those diseases which annually decimate their ranks. Until people are brought to see the evils they inflict upon posterity and the world, by entering into the married state while suffering from disease, until mothers become better instructed in the management of infants and children, especially as regards their diet, there will always be, we fear, a great amount of tubercular disease prevailing. It is therefore to the improvement in the sanitary condition of our towns and cities, and the diffusion of knowledge amongst all classes of their inhabitants, that we must look as the means by which we may hope to reduce the present enormous mortality from phthisis, and other allied affections.

We have not entered at all upon the medicinal treatment of consumption, nor upon the consideration of those other diseases of the air passages and lungs which are noticed in the volumes before us, simply because there is really nothing new advanced on any of the subjects; and the rules laid down are those with which every intelligent practitioner is perfectly familiar.

On the Management of Labour in Contracted Pelvis. By Dr William H. Jones. London: 1867.
On Cephalotripsy. By G. H. Kidd, M.D., etc. Dublin: 1867.

These two pamphlets, although differently named, are on nearly the same subject. They are both written by gentlemen who are evidently zealous; but it is a little difficult to make out what particular object either has in view by his publication. Dr Jones has given us his thesis written for the Faculty of Medicine of Paris in 1864. It is a very good thesis; but it does not solve the question, which has vexed obstetricians for the last century, as to what cases of labour, complicated by contracted pelvis, are best treated by long forceps, what by turning. Dr Jones has not done the thing required at present in this matter,—namely, to take up the question as left by Joulin in his able memoir on the forceps and version in cases of contraction of the pelvis, published in the Memoirs of the Academy of Medicine of Paris. Dr Jones' arguments for version, in some cases, do not avail much against his statement that his teachers, Paul Dubois, Depaul, Pajot, Blot, etc., etc., are in favour of the forceps in the same class of difficulties.

Dr Kidd is strongly in favour of the cephalotribe. He thinks much may be expected from this instrument in the way of improving the operation required after craniotomy has been performed. He frequently speaks of Sir James Simpson's cephalotribe, but he alternately praises and dispraises, and finally substitutes for it one of his own, which we do not admire. We recommend to our ingenious friends a little more waiting for experience before they urge their instruments on professional notice. A cephalotribe that will have the approbation of the Dublin school will be highly prized by the profession. That school is admired for nothing more than its highly educated and experienced accoucheurs. Their experience guides their ardour, and we have not from them an afflicting fruitfulness in ingenious short-lived treatments. We hope the cephalotribe will soon pass through the ordeal of the Dublin Lying-in Hospital, and shall congratulate Dr Kidd most warmly if his instrument is — say ten years hence—the adopted of the Rotundo. Meantime we may, to be brief, say that his first case proves too much, his second case nothing at all. He should study carefully the essay of Braxton Hicks on the best mode of delivering the fœtal head after perforation, published in a recent volume of the London Obstetrical Transactions. Dr Kidd's zeal is some excuse for his exaggerated notions of the value of the cephalotribe. It is surely very far from only second in importance to the forceps as a practical discovery.

Clinical Memoirs on the Diseases of Women. By M. GUSTAVE BERNUTZ and M. ERNEST GOUPIL. Translated by Dr ALFRED MEADOWS. The New Sydenham Society. London: 1867.

THIS second volume of the work above named contains the chapters by Bernutz on pelvic peritonitis, and the chapters by Goupil on uterine deviations.

The chapters by M. Goupil on uterine deviations are well worthy of careful study. They originated in the excitement connected with the discussions on intra-uterine pessaries. Now that the question is, for the time at least, settled against the use of the pessaries, the chapters of Goupil have lost much of the interest they had when originally published.

The chapters by Bernutz contain, we believe, a substantial contribution to the diseases of women. As we have already twice reviewed the French edition of the book, we need not return to it. Only we are happy to say that Dr Meadows, by abridging and other means, has made the valuable work of Bernutz not so tiresome as we found the original to be.

Lectures on Public Health. By E. D. MAPOTHER, M.D., Professor of Hygiène, and Medical Officer of Health for Dublin. 2d Edition. Dublin: Fannin & Co.: 1867.

THE success of this little work on Hygiène has not surprised us, and we are glad to see its re-issue in an enlarged and amended form. It is remarkable—although so much attention has been paid of late years to this important subject—that, with the exception of these lectures, and the larger and more important work of Dr Parkes, there is no treatise in our language to which the student of medicine can be referred for information on sanitary matters. In this respect our medical literature contrasts unfavourably with that of France. It can boast of the standard works of Foderè, Rostan, Levy, Parent-Duchâtelet, Trébuchet, and Tardieu, not to speak of more popular *résumés.*

Dr Parkes' Practical Hygiène is all that could be desired. It is an exhaustive work; but we are convinced that its very copiousness of detail and size will prevent it becoming a favourite with the young practitioner. As a work of reference, it will always hold a deservedly high place; but it is too much occupied with the practical details of sanitary science, and its style is too condensed ever to lead one to take it down from the shelf for a quiet perusal. It resembles the kind of book of which Dr Latham wrote—"The very abundance of its matter has made it a *hard* book for the student." On the other hand, these lectures of Dr Mapother will, we are convinced, do much to make the discussion of sanitary matters popular with the medical student, and will induce him to study the subject for himself. This is in truth the great merit of the volume. With no pretensions to originality, and with the most scrupulous care to assign quotations of facts and opinions to their true source, our author has managed in twenty-four lectures to give a full sketch of preventive medicine, and at the same time, with the vivacious style of his countrymen, to make a readable and entertaining volume. Such an effort is not to be despised. Without such books many would be deterred from the investigation of subjects of great interest, but which are too generally presented in a dry and forbidding form. Dr Mapother has broken ground, and we wish him all success. To the medical student and practitioner we can recommend these lectures as supplying a want which has been long felt, viz., a concise and accurate introduction to a subject which is daily assuming greater importance.

The first six lectures are devoted to the influence of the sanitary agents, air, water, and food. In the following ten lectures, what the individual can do to promote the general health is pointed out, and also the importance of sanitary improvement as directed to house accommodation and drainage, intra-mural interment, and the subject of occupations dangerous to health. The remaining lectures contain a rapid sketch of the chief diseases which engage the attention of the sanitary reformer, and of the means at our disposal for preventing their appearance and diffusion. In conclusion, Dr Mapother gives a vivid picture of the difficulties experienced in Ireland some years ago from the want of a general Sanitary Act. Since the publication of this lecture, both England and Ireland have been provided with a Public Health Act, the provisions of which give ample powers to the authorities. By some mischance the Act in question was found not to apply to Scotland, and we have been left to work on with the unsatisfactory Act at our disposal. And as the result of some experience, we cannot allow that the Act of 1856 deserves the encomium of Dr Mapother, that it is "the most comprehensive and well managed ever passed in these kingdoms." It may look so on paper, but when we come to put it in force its deficiencies become apparent. Thanks, however, to the present Government and to the Sheriff of Linlithgowshire, Scotland has now been provided with an amended version of the Public Health Act which has so recently been passed for the sister kingdoms.

Conservative Surgery, as Exhibited in Remedying some of the Mechanical Causes that operate injuriously both in Health and Disease. With illustrations. By HENRY G. DAVIS, M.D., Member of the American Medical Association, etc., etc. New York: D. Appleton and Co.: 1867.

JUDGING from the casual glimpses we receive of the author of this work in the preface and the text, when his natural modesty for a moment allows him to lift the veil, he must be one of the most remarkable of men, of extraordinary talent and originality, one of the greatest benefactors his species has ever enjoyed, and like many other great geniuses and philanthropists, he has been as yet recognised only by the select few, and his scientific discoveries been ruthlessly appropriated. By a brief sketch of the plan of the remarkable work now at last in our hands, and by a few quotations, we hope to prove that its originality and freshness have been recognised by one at least in addition to the author. In the preface we are prepared for what is to follow:—

> "These results embrace causes and remedies that would only be suggested to one possessed of large mechanical ingenuity, or a faculty by which mechanical causes are recognised."

In the name of the work we find the originality at once cropping out. Conservative Surgery being evidently a most appropriate title for a work which includes fractures, dislocations, disease of the hip, rickets, spinal irritation, phthisis, and a chapter on uterine correctors.

Most of the chapters include two very different pictures, first, a *réchauffé* "of the views and opinions of the profession," generally very stupidly done, and rendered almost unintelligible from want of arrangement. Second, "my own comments," and an account of *my* method of treatment and its success. It would *now* be equally tedious and unnecessary for us to make any quotations from the accounts of the usual practice of surgeons, enough to prove our point to quote some of the remarkable discoveries and successes of our author in his own almost too humble terms:—

> *On Dislocations.*—"Formerly, when the distinctive term 'old' was applied to luxations, it meant those of a few weeks', or at most a few months' standing. In future, the time may be extended to years. . . . By this plan of elongating the soft tissues, all dislocations, whether recent or of *many years'* standing, all fractures, all deformities that are dependent upon the soft tissues, are entirely within our control. . . . We have reduced dislocated hips at all periods of time, from the recent up to that of fourteen years' standing, and, in the latter case, restored a club-foot on the same limb at the same time."—Pp. 38, 39.
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> "So far as the certainty of a reduction is affected, a luxation of twenty years' standing is upon the same footing as one of twenty days. The principal difference is in the length of time requisite to accomplish it."—P. 41.

Dislocation of muscle—"generally affecting long thin muscles, which may be thrown out of their places by sudden contraction, and cannot return without artificial assistance"—is to be treated "by continuous elastic extension, together with compression over the displaced muscle or taxis, as in hernia, to crowd it back into its proper place." This chapter has perhaps not quite so much originality, the same observations being found in the oral teachings to patients of certain well-known bone-setting quacks in this country.

The following does seem original:—

> "The muscles of the shoulder-joint may get into this condition after accidents, rendering the arm of very little use for a long time. This has been cured by placing the bend of the elbow on the crown of the head, with the fingers touching the ear on the opposite side, and keeping it in that position for several hours."—P. 89.

Great men always have their imitators, and great inventions are occasionally appropriated. Dr Davis has suffered: "*Dr* Barwell of London (*sic*) *having overlooked the fact that we had promulgated this principle and practised it for many years previous to his adopting it.*" The principle referred to being the method of treating talipes by elastic extension.

Dr Davis's system for the cure of lateral curvature of the spine involves the use of a proper apparatus, and of a system of exercises, which the patient is to practise during the day:—

> "As a system of labour, not as a mere pastime. . . . One week of constant exercise is of more value in restoring the curvature than the same labour spread over four weeks."—P. 154.

Perhaps it is in the treatment of synovitis that our author's success is most remarkable. In his own modest language, the results of ordinary medical treatment are contrasted with his own:—

> "It seems necessary to state that a large part of the symptoms and the conditions of joints given by authors are the result of the disease being allowed to progress, *aided, at the same time, by the pressure from contraction of the muscles.* If our mode of treatment by *continued elastic extension* were adopted from the first access of the inflammation, the effects enumerated would not be found. . . . We have drawn this gloomy picture from authors of the effects of this disease . . . in order that the reader may the more fully appreciate the untold advantages arising from the mode of treatment we have practised for the last fifteen years. Well has the latter been termed one of the greatest discoveries of the century, etc. . . . With this result as a consequent of our treatment of this disease, what is to destroy life? . . . We think the time is not far distant when our professional brethren will fully agree with the statement we made in 1860, before the Academy of Medicine of this city, viz., that a patient ought never to die from the direct effect of either morbus coxarius, white swelling, ulceration of the vertebræ, or of any other joint."

On morbus coxarius Dr Davis begins with an apology surely unnecessary:—

> "So much has already been written upon this subject, and so many have sought to establish popular reputations by erecting beacons along this path of science, that we hesitate, and would not enter upon its consideration, except to vindicate our priority to the discovery of the true pathology of this disease, and also the only correct principles of its treatment."—P. 212.

As a controversialist, Dr Davis is no less an intellectual giant than as a therapeutist. Under the head of Tuberculosis of the Spine, he brings out that Drs Sayre and Taylor are, as a rule, wrong in their views, except when, in a partnership in guilt, they have stolen Dr Davis's opinions (p. 265). As a physician, also, as well as a conservative surgeon, Dr Davis has done much for humanity. Sylvester's method of artificial respiration was published by Dr Davis four years before Dr Sylvester discovered it (p. 293). He has discovered not only a cure, but a prophylactic against phthisis. It consists in swinging from a horizontal bar by the hands, and

> "This exercise is not to be a pastime—an occasional recreation—a matter or amusement—but a labour into which all the energies are thrown—labour and effort such as a man makes when his life is in immediate danger. It should not be relinquished when a little weary; but the energies should be goaded to the last extremity. . . . When this treatment commences with the disease, and is pursued uninterruptedly, we have every reason to expect that every case will recover. When the treatment is used as a prophylactic, every case will be prevented."—Pp. 301, 304.

Lastly, the uterine correctors invented by this Admirable Crichton have all the virtues and none of the vices of their species.

Of the language in which the work is written, we can hardly speak; it is certainly not written in English; and in orthography and syntax alike does it show a healthy disregard of conventionalities. Had we greater space, a few extracts might have shown that the author possesses as much courtesy as modesty, and as little scientific acquirements as common sense.

Atlas of Surgical and Topographical Anatomy. By B. J. BERAUD, Surgeon and Professor to the Maternity Hospital of Paris, Vice-President of the Biological Society, etc. Illustrated by Plates drawn from Nature by M. BION. Translated by ROBERT THOMAS HULME, M.R.C.S.Eng. London: H. Baillière: 1866-67.

A YEAR ago we laid before our readers a notice of the first two parts of this work. Since that time, the publication has proceeded with a regularity rarely met with; and the atlas has now been completed in eleven parts, containing one hundred and nine plates.

We are glad to be able to speak in the same terms of commendation regarding the complete work as we employed when noticing the early numbers. The dissections have been carefully planned; the drawing and colouring are excellent, while the accompanying letterpress is clear and explicit. The atlas will be very useful either to the student to assist him in understanding his dissections, or to the practitioner by refreshing his memory in the most important points of regional and surgical anatomy.

Part Third.

MEETINGS OF SOCIETIES.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXVI.—MEETING XI.

April 24, 1867.—Dr BURN, *Vice-President*, in the Chair.

I. NOTES OF A CASE OF PLACENTA PRÆVIA, WITH PREPARATION. BY DR MILNE.

This paper will appear in a future number of the Journal.

Dr Cochrane remarked, in reference to Dr Milne's case, that if the placenta had been brought away, the child would probably not have survived. The wonder was that the child lived. He (Dr C.) had a case lately, in the Grassmarket, of placenta prævia, where the child was lost. In reference to the question of manipulation, he always practised it, on the ground that there was no danger, and that it greatly expedited the labour.

Dr Gordon, in speaking of the removal of the placenta, said that the child might live, even although the placenta was removed first, provided delivery followed immediately.

Dr Burn could not agree with Dr Milne in regard to the non-introduction of sponge plugs. He (Dr B.) had had fifteen or sixteen cases of placenta prævia, nine or ten of which were completely over the os, while five or six were partially so. Five mothers died. In three or four cases he had used the vaginal sponge plug. He argued that if the membranes were not ruptured, internal hæmorrhage could not occur; and that, consequently, no harm could result from their use. The use of sponge tents, he said, had the happiest effects in cases of abortion. He thought that if Dr Milne had in his case plugged the vagina, the case might have been simpler. In answer to a question put by *Dr Gordon*—"How you can ascertain whether the membranes are ruptured?" He (Dr B.) replied, that one can distinctly feel the precise position of the placenta, whether completely or only partially over the os; also, by placing the hand over the abdomen, one can feel that there is something besides the baby. He mentioned a case where a patient had been bleeding profusely; when he saw her, he found that the placenta had been expelled on the bed for three hours, and the child lying across the uterus, requiring turning.

Dr Bryce said he had seen only two cases of placenta prævia; one complete, where the child was lost, and one partial. He mentioned an interesting fact, that a child, the second of twins, was born at 10 o'clock P.M., and breathed for the first time at 3 A.M., the heart having only faintly pulsated between.

Dr Burn said, that in a case of partial placenta prævia where he had found the hæmorrhage alarming, he ruptured the membranes, and the women did well.

Some conversation followed as to the virtue of astringents in cases of uterine hæmorrhage; some believing and some doubting the efficacy of gallic acid and the pernitrate of iron.

Dr Ritchie understood that the tinct. of hemp, when given, produced contraction of the uterus; and, consequently, if given in cases of abortion, it would cause expulsion of the ovum. Belladonna would be better.

Dr Gordon commended the use of gallic acid in menorrhagia.

Dr Bryce spoke in favour of a cotton wool vaginal plug, in cases of abortion.

Dr Milne replied, that he believed internal hæmorrhage would go on although the vagina was carefully plugged. The pernitrate of iron was, in his opinion, the best tonic, although not powerfully astringent.

Dr James Young asked the gentlemen present whether they frequently saved the children in cases of arm presentation,—he having recently had two such cases, in both of which the child was lost. In one, however, the cord was also down.

Dr Burn observed that in one case, an eighth child, which Dr Cuthbert and he saw together, the arm and cord presented, yet the child was born alive. The first four children were all natural births, the next three still-born.

Dr Bryce gave two cases of arm presentation, in one of which the child died.

SESSION XXVI.—MEETING XII.

8*th May* 1867.—Sir JAMES SIMPSON, Bart., *President*, in the Chair.

I. Two drawings were shown by Dr Andrew Inglis, of abnormal presentations. In one the face was under the pubes, where, notwithstanding the application of forceps, with great traction, the child survived.

Dr Inglis said there was no rupture of the perinæum.

II. CASE OF PUERPERAL MANIA. BY JAMES YOUNG, M.D., SEC. OBS. SOC.

My only apology for laying the particulars of this case before the members of the Obstetrical Society is the comparative rareness of the malady, as well as, and more especially, the peculiar interest attached to this case, ending as it did fatally, from uterine phlebitis, which Dr Skae informs me is seldom met with. Before referring to the history and treatment, let me briefly make one or two observations on the meaning of the term "Puerperal Mania," or "Insanity." Dr Tuke, in an excellent paper, read before the Medico-Chirurgical Society two years ago, divided puerperal insansity into three distinct and separate forms: 1*st*, Insanity of Pregnancy; 2*d*, Puerperal Insanity; 3*d*, Insanity of Lactation. Dr Tuke adds, that during eighteen years, in the Edinburgh Asylum, there had been 155 cases of so-called puerperal insanity, but only 73 of these could be classed under real "puerperal insanity," and of which only 6 died. I would define puerperal insanity proper to be a state of mania coming on within ten days after delivery. Some writers, however, extend it to a month. In a valuable paper by Sir James Simpson on the subject, he states that Esquirol, out of 92 cases, found that 37 were attacked before the fifteenth day; and Sir James mentions one case where the mania commenced nine weeks after delivery. Mr Hamilton, of the Infirmary, informed me that he had charge of one patient who, four weeks after delivery, became insane, and has continued so for three years. There were no indications of insanity before delivery, and not until she had nursed four weeks, and therefore some of these cases might be called insanity of lactation. In the case about to be referred to, there was no hereditary predisposition, although I believe that such frequently exists in this as well as in many other forms of insanity. Sir James, in this same paper in "Medical Times" for 1861, says, that when a patient has once suffered from puerperal insanity, she is liable to be attacked again. There are exceptions to this, and lately I saw a patient who laboured under puerperal mania after her first child, and although she bore four subsequent children, she never suffered from any other attack. Puerperal mania is more common in primiparæ, and in unmarried, than in married females. I believe it will generally be found that the sooner the maniacal condition comes on after delivery, the more acute will be the symptoms. The seventh day is commonly found to be about the time at which the mania commences, and is invariably preceded by an entire suppression of the lochial discharge. Dr Macdonald, an American physician, in writing on the subject, states that 85 per cent. of cases occurring one month after delivery recover. Dr Skae, on the other hand, limits the percentage to 75. Sir James Simpson thinks that two out of every three may recover within six months. The case now about to be glanced at is, in my opinion, one of real puerperal insanity, although the symptoms commenced during pregnancy; but you will observe that there were no maniacal symptoms, or such evidences as would constitute a case of puerperal insanity, *till some seven days after delivery*. I suppose all will agree, that there may pre-exist some symptoms during pregnancy before puerperal mania comes on. With these cursory remarks, I proceed to the case on hand:—

Mrs R. K. or W., aged 29, was the youngest of a family of four. Her parents are still alive, and quite healthy. All the other members of the family are equally so, both bodily and mentally. Mrs R. K. was married in 1856. She became the mother of four children, the first of these being born in 1858, the second in 1860—both at Portsmouth. I understand she made excellent recoveries on both occasions. Her third child was born in Edinburgh in 1862; and at this time, while under my own care, she recovered well, and had no untoward symptom. She was able to nurse all her children for some months. During all this period her health continued good, and she was particularly devoted to her children and their welfare. When she was seven months pregnant of her fourth child (Sept. 1866), she began to complain of weakness of the back, accompanied with general lassitude. She was dull and somewhat melancholic, and was observed to exhibit great disinclination to move about the house—sometimes continuing to sit in one place for hours together. She seemed to have no spirit for the performance of her domestic duties, and took little or no charge of household affairs. All these symptoms gradually increased towards the time of her confinement. For some unaccountable reason, no medical man was asked to see her at the time, and when labour came on, she was attended by a midwife. I have little doubt that dereliction of duty on the part of her husband, accompanied by intemperate habits, aggravated her illness before her confinement; and possibly *that disquietude* of mind, so induced, and irregular meals, may have tended to the production of the disease which so speedily cut her off. She was frequently heard to complain of severe headache, and little or no appetite. I ascertained that she had always been a strictly sober woman. She was delivered of her fourth child on the 3d of November 1866. Labour continued only two hours; was easy and perfectly natural, and, according to the statement of the midwife, she made a good recovery till the sixth day. There had been no flooding. She now became pale and yellowish, and said to a friend that she "felt as if she would never walk again." She became sullen and morose, and slept none all that night, but lay quiet. She occasionally imagined things. On the seventh day she was very hungry, and three times took a little breakfast, and up to 11 o'clock forenoon she was quite sensible, and complained of no pain. She suddenly jumped out of bed at 11 o'clock and sat down at the fire, exclaiming, "I am dying; I am not getting better." She immediately became outrageous, and began to scream and roar, crying for her husband and mother-in-law, and saying her "head was sore." She had made frequent attempts to get out at the window, and got downstairs several times even while undressed. I was sent for, and saw her at 5 P.M. on the 10th November (seventh day). On entering the room, I found her perfectly raving and furious, seizing hold of my coat, even tearing it. As I already said, she had slept none during all the previous night, and sternly refused all medicine, as it was, she believed, poison. I ordered a mixture of henbane and morphia, with æther, but failed to get it administered. My father saw her about 8 o'clock the same evening, and prescribed some scammony, which moved the bowels three times. She still refused food, but drank a little wine with water. On inquiry, I found that there had been a total cessation of the lochial discharge for some days. I saw her again early on the eighth day, but still found her the same. She had slept none all night. The lacteal secretion, which had been abundant for six days, had now ceased. She was able to name me, as well as her friends around, and at the same time was quite maniacal, seizing hold of the bed-post, calling the devil to come out from beneath the bed, crying out lustily, "Fire, fire, fire!" "Murder, police," etc. She was closely watched all day, till arrangements were completed for her removal to the asylum. She repeatedly got hold of sugar basins or bowels, and dashed them at any one near her, or through the window. At 9 o'clock P.M. she was with difficulty taken to the asylum.

The following is Dr Skae's report:—

Rosina Walker or Kay, æt 29. Admitted 8th Nov. 1866. Married. First attack: duration two days. Cause, childbirth. Very suicidal and dangerous. Medical Certificate No. 1.—"The case is one of violent puerperal mania. I have observed her indicate the most abstruse notions on every subject, wildly roaming over every possible subject. She is very talkative, excited, and violent, breaking windows, etc., and afraid of women with knives." Medical Certificate No. 2.—"No rational answer to any question. Refuses to take medicine or go to bed. Supposes the medicine to be poison. Throwing articles of furniture at others in the house. Biting severely her husband on the shoulder. Smashing articles of furniture, etc."

Two attendants were sent for this patient, and she was admitted late at night, and taken to the padded room very weak and delirious. Refused to take any food.

9th Nov. Had no sleep last night nor all to-day, but was restless and in a state similar to ordinary delirium tremens. Constantly rattling on in the most wandering style, with her eyes wide staring open, exploring every corner of the room, pointing nervously at various objects, persons, etc., which she imagines she sees. It is obvious, from the expression of her face, that her mind is thronged with the most fantastic images, incompatible, fleeting, often horrible, and that they vanish almost before she expresses them. "Blood, oh look! There is my daughter Rosy; Rosy, come here. You won't allow them to choke me, will you? Stop, let me pray. There is Mrs Paterson." Fancies she sees her daughter and other familiars. Mistakes the attendants for other people, etc. Hears voices and answers them. She is emaciated and pinched in the features. Pulse rapid, small. Tongue dry, brown. Croton oil was administered in the morning, and moved her bowels. Has taken no food all day except a little beef-tea.

10*th.* No sleep last night. In same state as yesterday. Fed in the morning with custard and beef-tea, along with morphia ʒi., chloric æth. ʒss., by stomach-pump. At night took a custard herself.

11*th.* No sleep apparently. No change. Fed by stomach-pump with beef-tea and custard, and given morphia ʒii., chloric æth. ʒi. At night again fed herself.

12*th.* Lay quiet all night, and slept well. To-day more composed, but still requiring to be fed. Morphia, as yesterday, twice.

13*th.* Quiet all night, but did not sleep. Much more settled to-day, but still to be fed. Fell asleep this morning a few minutes after being fed.

19*th.* Shortly after last entry, it became evident that this patient was beyond all hope, for, in spite of the ample nourishment which was supplied her by the stomach-pump, she obstinately refused to take any food herself. She gradually got weaker, the features became more pinched, the skin dark-yellow coloured; the excitement subsided, but there was no return of intelligence; she sank into a low muttering condition, and it was obvious that there was some fatal mischief going on within. She seemed at times to be in great pain, and to suffer acutely from the light. She kept her head bent down, her eyes tightly closed, and frowned and assumed an expression of pain whenever she was lifted up in bed. She clutched tightly at things about her, and often dug her nails so deeply and firmly into the attendants, that it was with difficulty they could loose her hold. It could not be ascertained whereabouts it was she felt so much pain. There was no tenderness on pressure over the abdomen, and she could not answer questions, nor point to any painful part. In a day or two, an abscess made its appearance on the back of the right hand, and it was followed shortly afterwards by one on the dorsum of the right foot. She never was observed to have any rigors. The expression of pain never passed off her face till she died to-day.

Note.—There has never been any lochial discharge in this patient, and this was supposed to be the cause of her going insane. Breasts were very hard on admission. The child was born about a week before she became insane.

At the autopsy, which took place thirty-two hours after death, the uterus, at that point where apparently the placenta had been attacked, was found to be in a state of suppurative inflammation. The veins contained in the broad ligament on the right side were filled with pus, and the sub-peritoneal cellular tissue in the neighbourhood also contained pus.

There was a considerable collection of purulent fluid in the right knee-joint; and in the cellular tissue on the back of the right hand, and on the dorsum of the right foot there were similar collections.

Nothing abnormal was discovered in the head or thorax.

Sir James Simpson remarked, that in this case there seemed to be two distinct diseases. First, undoubted puerperal insanity, and secondly, puerperal phlebitis, both of which might exist in one case, and though entirely separate diseases. The one does not produce the other. Puerperal mania may come on late in lactation. Regarding the use of opium in cases of puerperal mania, Sir James narrated a case where a first wife had died of mania, and the second wife was seized with the same disease, and was cured by the use of four grains of opium by suppository. He said that the late Dr Malcolm of Perth had almost never seen a patient go wrong if they were well fed, and opium used if necessary. Chloroform was also beneficial in some cases.

Dr Keiller observed that it was of the greatest consequence in puerperal mania cases to administer a due supply of nourishment, and that the difficulty of doing so was often great because of the determination the patient evinced against taking food. Dr K. had found, in such extreme cases, that feeding the patient while under the influence of chloroform by means of the stomach-pump was very advantagous, and cited the particulars of a special case showing its success.

Dr Ritchie thought the case before them presented some rare symptoms, which were due to its complicated character. He generally met with halucination of taste and dread of poison as a common trait in puerperal mania. He strongly recommended the use of eggs and ale as food for maniacal patients, and was favourable to the treatment of these maniacal cases by opium.

Dr Sidey had lately successfully treated a case of puerperal mania (which had come on fourteen days after delivery) by administering two drachms of the sol. of morphia. The mania lasted three days.

An interesting conversation followed as to the virtue of bromide of potassium in cases of mania;

Dr Thomson of Dalkeith stating that a patient of his who had suffered from puerperal mania, after her first confinement recovered under opium; after her second confinement she became *chronically* insane, and recovered only when removed to an asylum for three months. When pregnant for the third time (second month) she became again insane, and recovered in a few days while taking scruple doses of bromide of potassium frequently, sleep being procured only after still fuller doses at bed-time. He added that he had had lately a case of acute mania in a male where opium did good, but where the bromide seemed to be much more useful. Although the patient improved under the latter medicine, he ultimately succumbed to the disease. He had only in one other case seen such obstinate refusal of food,—every effort to get food over being followed by great exhaustion. He recommended the bromide in mania, especially where opium was no longer advisable, or indeed admissible, *i.e.*, where there was a weak circulation and clammy perspiration. He admitted that in this last condition, in certain other diseases, opium was a valuable stimulant, but here it was the *reverse*.

Dr Keiller had used this drug largely as a calmative, and had found it of very great service in delirium tremens and other cases in which wakefulness was a predominant symptom.

Dr Charles Bell thought that there was some misunderstanding as to what might be called a large dose of bromide of potassium,—the doses varying from five grains to an ounce. Dr Begbie spoke of half-drachm doses, he believed.

Sir James Simpson said some patients of his would as soon think of giving up their breakfast as their bromide while labouring under fibroid tumours. He agreed that its actions should be watched, for although fifteen years had elapsed since it was known, still there was room for inquiry.

Dr Burn commended its use in fifteen-grain doses, three times a-day.

Mr Carmichael asked whether any treatment could be adopted to prevent puerperal mania recurring. He had found chloroform useful.

Dr Burn said he had had one case of mania where the patient had not been at home for nine years. When confined last she became maniacal, and under the use of chloroform she got better and nursed the child.

Part Fourth.

PERISCOPE.

REPORT ON OPHTHALMOLOGY.

BY DR ARGYLL ROBERTSON.

VON GRAEFE'S NEW MODIFIED LINEAR EXTRACTION.

THIS method of operating for cataract has attracted such general attention, from the success that has followed its employment, that it demands a short description at our hands, although two years have elapsed since its introduction to professional notice and papers containing an account of it have appeared in several English journals.

From a careful consideration of the advantages and disadvantages attending the scoop extraction of cataracts, as first recommended by Waldau and subsequently modified by Bowman and Critchett, Professor Von Graefe was led to devise a method of operating which would preserve all the benefit of iridectomy and a linear incision, and avoid, as far as possible, the evils that accrue from the necessity of introducing instruments into the eye to assist the evolution of the lens.

The result of his deliberations was the introduction of this new operation.

The instruments required are—

1*st*, A long, narrow knife, not unlike a fine tenotomy knife. The blade should be rather above an inch in length, and not exceed one tenth of an inch in breadth. To give firmness to the blade, the surfaces should be pretty convex.

2*d*, An ordinary cystitome, to lacerate the capsule.

3*d*, A pair of iris forceps.

4*th*, A pair of curved scissors.

5*th*, A blunt hook, with its stem bent at an obtuse angle at about a quarter of an inch from its extremity; this bending of the stem is to facilitate the introduction of the hook through an incision at the upper part of the eye.

6*th*, A pair of toothed forceps.

7*th*, A wire speculum.

The patient being placed on a couch, and the lids fixed by means of the speculum, the surgeon pinches up a fold of conjunctiva close to the inferior margin of the cornea, with the toothed forceps, and draws the eyeball downwards, and proceeds to the

First stage of the operation—the incision. The narrow knife, with its cutting edge upwards, should be introduced through the junction of the sclerotic and cornea at a point half a line from the margin of the cornea, and as much below the tangent of its vertex. The point of the knife should first be directed downwards and inwards until it reaches the centre of the pupil, the handle is then to be depressed and the point directed upwards and inwards to a spot in the corneo-sclerotic junction corresponding to the point of entrance, where counter-puncture is to be made. As soon as the point of the knife has penetrated, the edge of the blade should be directed forwards, and the incision completed by cutting straight out with a slight sawing motion.

A portion of conjunctiva is the last tissue to be divided, and forms a flap, which covers the site of the incision in the corneo-sclerotic junction.

The second stage of the operation consists in the excision of a portion of iris. Generally a portion of iris prolapses as soon as the incision is completed, which is to be seized with a pair of iris forceps and excised with the scissors, care being taken that the conjunctival flap is not cut away, and that no portion of iris is left between the lips of the wound. When the iris does not prolapse through the wound, the forceps must be introduced, a portion of iris drawn out and excised.

The third stage of the operation is the laceration of the capsule, which is effected as in the ordinary flap extraction. The laceration should be very free, and extend to the periphery of the lens, especially above.

The fourth stage—the evacuation of the lens. This is to be accomplished by drawing the eye freely downwards with the forceps, and applying the back of the curette with gentle pressure to the sclerotic margin of the incision, so as to make the wound gape. To assist the evacuation of the lens, gentle counter-pressure may be made with the forceps below; while the curette should be made to glide along the sclerotic margin of the incision, and then upwards from the site of the incision with gradually increasing pressure ("slide manœuvre"). As the nucleus of the lens presents itself at the incision the pressure is to be relaxed, and the evacuation may be completed by applying the curette to the edge of the nucleus. If, however, the nucleus is of such size as not to pass through the incision without having recourse to a dangerous amount of pressure, its evolution must be assisted by traction with the blunt hook, which is to be inserted through the incision, passed along the posterior surface of the lens, and its extremity hooked below the lower edge of the nucleus.

The fifth stage of the operation consists in the clearing of the pupil from any fragments of lens that may remain by friction exerted through the lids, in clearing the lips of the wound from any intervening iris tissue or blood-clot, and in adjusting the conjunctival flap.

The after treatment is simple: the hollows of the orbit are to be filled with cotton wool, and an elastic bandage applied, which may be changed twice a day. Rest is recommended, but is not so imperatively necessary as after flap extraction. The patient may even get up the second day after the operation. No change of diet is necessary, beyond the avoidance of stimulants and such articles as require mastication. From the second day atropine is to be applied twice daily, to prevent adhesion between the cut extremities of the iris and the capsule of the lens; this application, however, is deferred where there is copious conjunctival secretion.

Prolapse of vitreous is the chief evil to be feared in the performance of the operation; and Von Graefe is of opinion that though too peripheral an incision, too great pressure exerted to effect the evolution of the lens, etc., may have partly caused the prolapse of vitreous, still that strong muscular straining contractions on the part of the patient are the chief factor in the production of this complication. Anæsthesia, of course, may thoroughly neutralize muscular action, but Von Graefe has some difficulty in having general recourse to chloroform, from a certain amount of danger to life that attends the induction of complete narcotism.

The advantages claimed by Von Graefe for this operation are, 1*st*, That the incision is linear, as the consequence of which the coaptation of the edges of wound is more perfect than is the case after a flap incision, and there is less risk of gaping of the wound, permitting loss of vitreous, *after* the performance of the operation; 2*d*, That it is peripheral, passing chiefly through a vascular texture in which the healing process occurs more rapidly than in a non-vascular tissue; 3*d*, That the incision may be viewed as subconjunctival, being covered by a flap of conjunctiva; 4*th*, That a portion of iris is removed, and thus no prolapse of iris can occur, and the tendency to iritic inflammation is diminished; 5*th*, That in most cases no instrument is introduced to assist the evolution of the lens, and, when such is necessary, a hook merely is employed; and 6*th*, That the after-treatment is of short duration.

The results that Prof. Von Graefe has obtained by this operation are very encouraging. Within one year he has operated by this method upon 300 cases including cataracts of various forms without selection, some immature and some complicated with conjunctivitis, granular lids, affections of lachrymal passages, staphyloma posticum, chronic iritis, etc. He has nevertheless obtained a perfect result by one operation on 90 per cent. of the cases (in 82 per cent. healing occurred without a single unfavourable symptom, in eight there were temporary complications). In 10 per cent. the result was imperfect, but in some of these a favourable issue might still be expected after a second operation (as for artifical pupil, etc.); and judging from his results of secondary operations in former cases, Von Graefe gives as a probable ultimate result, that 94 per cent. of the 300 cases as yet subjected to this new operation would recover good vision.

The following statistics given by Von Graefe serve to show the percentage of success in his hands of ordinary flap extraction and scoop extraction.

During eleven years he has operated by flap extraction in 1600 cases, and obtained 80 per cent. of perfect results by one operation, 13 per cent. imperfect results (of these 10 per cent. afforded hope of being improved by an after-operation), and 7 per cent. failures.

A marked improvement in his results followed the introduction of the compress-bandage. He has operated by flap extraction in 900 cases since then, and in them obtained in 84 per cent. a perfect result, an incomplete result in 11 per cent., and 5 per cent. of failures. Scoop extraction was resorted to in 118 cases, of which 67 per cent. ended in perfect results, 27 per cent. imperfect, and 6 per cent. failures.

In a recently published supplementary note, Von Graefe states that he now effects the evolution of the lens by pressure exerted in a manner essentially the same as in ordinary flap extraction. He applies a spoon to the lower half of the cornea and exerts a gentle pressure in the direction of the centre of the eye, followed by short pushing movements from below upwards. He does not object to the slide manœuvre being employed in the first instance to secure the presentation of the margin of the lens, but considers that after this is effected the slide manœuvre contributes merely to increase the intra-ocular pressure without having any special bearing upon the line of emergence of the cataract. —*Archiv für Ophthalmologie*, xi. band, 3 abth, 1865, and xii. band, 1 abth, 1866. (Translation in *Ophthalmic Review*, Nos. 9 and 10, 1866, and in *British Medical Journal* of April 6, 20, May 4, June 8, and June 29, 1867.)

QUADRI'S MODIFIED LINEAR EXTRACTION.

In this method of operating for cataract, the capsule is removed *before* the evacuation of the lens. An incision is made through the circumference of the cornea with a lance-shaped knife as in ordinary linear extraction, except that the point is directed against the lens, thus incising the capsule. A pair of iris forceps is then introduced, and the capsule seized and extracted whole. The lens is then removed with the scoop.

The object in removing the capsule is to prevent the formation of a secondary cataract. When the capsule is not removed till after the evacuation of the lens, great difficulty is often experienced from prolapse of vitreous, which is not to be feared when the capsule is extracted before the lens.

Signor Quadri has not yet practised this method sufficiently often to be able to draw positive conclusions regarding its success. —*Annales d'Oculistique*, tome lvii. p. 259 (translated from *Giornale d'Oftalmologia Italiano*).

DR HENRY W. WILLIAMS' MODIFICATION OF THE ORDINARY FLAP EXTRACTION.

This modification simply consists in uniting by a fine ligature the edges of the incision at the apex of the corneal flap. The ligature may remain without inconvenience for a period of eight days. By its means he maintains that the risks attending extraction are diminished, as thus the repeated introduction of instruments into the eye, or mutilation of the iris which occurs in some methods of operating, is avoided, while prolapse of the iris the *bête noir* of ordinary extraction is prevented, and atropine may be freely employed. The patient may be placed under ether, and subsequent sickness can do no mischief; evacuation of vitreous humor is prevented and the edges of the wound are kept in exact apposition, while the length of time during which the patient should be kept absolutely at rest is abridged. If the suture does not come away by the eighth day, the patient should be etherized and the suture removed.

Dr Williams has operated thus in 24 cases without meeting with any inconvenience from the adoption of this modification. Of these, two eyes were lost.—*Annales d'Oculistique*, tome lvii, p. 292 (translated from *Transactions of the American Ophthalmological Society*, 1866).

M. MILLIOT ON THE REGENERATION OF THE LENS.

During two years M. Milliot made numerous experiments on rams, dogs, cats, rabbits, guinea-pigs, rats, and frogs, to determine whether the lens can be regenerated after it has been removed from its capsule while in a healthy state.

He removed the lens by the ordinary flap extraction. The after treatment consisted in uniting the lids by two sutures, which ulcerated out in from three to five days. Other methods of removing the lens were occasionally employed, such as Von Graefe's new operation. In some cases he guarded the animals' eyes by fixing their ears in front of them by sutures.

The results of his investigation he sums up as follows:—

1*st*, That it is an incontestable fact that the lens is capable of régeneration, in which process it passes through the same phases as during its embryonic evolution.

2*d*, This regeneration does not occur in the capsule of the lens. It takes place the more quickly the greater the amount of cortical substance left on the internal surface of the capsule. The regeneration is the more difficult the older the animal, and when the rupture of the capsule has been very extensive. Inflammation of the iris and ciliary body favours its production—panophthalmitis hinders it.

3*d*, The reproduction of the lens is dependent on the anterior capsule. The posterior capsule takes no part in the process, unless its most peripheral part.

4*th*, The regeneration may occur even when the whole of the lens has been extracted.

5*th*, Regeneration commences at the end of the second week after operation, and is completed between the fifth and twelfth month, or even later when the animal is aged.

6*th*, The new lens never attains the size of the original. They may attain to, or even exceed, half the volume of the normal lens.

7*th*, After partial or total extraction, the capsule of the lens may contain either a regenerated lens exhibiting all the characters of that organ under the microscope, or, what occurs more frequently, an amorphous and hyaline substance containing a small number of nuclei, analogous to those of the cells of the aqua morgagni; or, lastly, laminous tissue, with embryoplastic nuclei coexisting with an effusion of vitreous humor or lymph, the result of iritis, into the cavity of the capsule.

8*th*, An incision of the capsule, so as to form a flap corresponding to that of the cornea, he found facilitated both the extraction and regeneration of the lens..

9th, After extraction of cataract in the human subject, no new lens forms. This he ascribes partly to the age of the patients, and partly to the modifications of exosmosis and endosmosis which occur in cataract. He, however, has some doubts on this subject, and ascribes the ability of the patient to abandon the use of spectacles some time after the operation (?) partly, at least, to the regeneration of the lens. He has not had the opportunity of examining the eyes of young subjects from whom an opaque lens has been removed.

10th, Of a number of authors who have deeply investigated this question, Backhausen was the only one who denied the regeneration of the lens.

11th, M. Milliot is pursuing his experiments on animals, taking the precaution so to incise the anterior capsule as to form a flap. He is also further investigating the question of the regeneration of the lens in man after operations for cataract, and intends publishing in extenso his results in the *Journal de l'Anatomie et de la Physiologie.—Annales d'Oculistique*, tome lvii., p. 185.

CASE OF POISONING BY AN ATROPINE COLLYRIUM.

Dr Nieberg of Berge was lately consulted in the case of a girl with cataract, and directed the father of the patient frequently to apply some drops of a solution of half a grain of the sulphate of antropine in a little distilled water to both her eyes, while he went to attend some other patients. On returning, after an interval of ten minutes, he found the vial empty, and the girl's pupils enormously dilated. The father denied that any of the solution had got into the mouth. In the meantime the patient exhibited no peculiar symptoms, and partook of some refreshment, but in a short time stated she could swallow nothing. After taking a cup of very strong coffee, she went with her father to take a walk in the open air; but soon staggered, looked wildly around, answered questions spasmodically and incoherently, her lips and face appeared as if burning, respiration and pulse increased in frequency, and she lost her consciousness more and more till she became quite delirious. After repeated subcutaneous injections of morphia, and cold applications to the head, she fell asleep for an hour and a half, and awoke much more tranquil, and partially conscious; was able to swallow some coffee, and, supported by her father, to walk in the garden. She gradually recovered, and was completely conscious at ten P.M. The following intervals occurred between the development of the symptoms:—The drops were applied at mid-day; dilatation of the pupil ensued almost immediately thereafter, ten minutes later dryness of throat was complained of, and, at the lapse of other fifteen or twenty minutes, difficulty of swallowing and walking, delirium, etc.—*Bull. de Thérap*, tome lxxii., p. 91 (quoted in *Annales d'Oculistique*, tome lxii., p. 188).

REMOVAL OF A FRAGMENT OF STONE THAT HAD BEEN IN THE ANTERIOR CHAMBER FOR FOURTEEN YEARS.

An interesting case is related by Dr Wecker of a man, aged twenty-two, who, fourteen years previously, had received a blow on the eye from a small piece of stone. After the injury, the eye was slightly inflamed, and in a short time the patient was able merely to distinguish light from darkness with that eye. On examination, the pupil was observed to be occupied by a bright white opacity, evidently the capsule with some adherent opaque lenticular substance. At the upper edge of the pupil, and on the surface of the capsule, a foreign body was distinctly visible of a gray colour and pyramidal form, and which, from its peculiar glance, was recognisable as a fragment of stone. An incision was made at the circumference of the cornea, and the foreign body and a portion of iris removed. The foreign body was found to be a piece of basalt two m.m. in length and breadth. The patient recovered rapidly from the operation, with considerably improved vision. A careful examination of the eye showed that the opacity was limited to the more central portion of the lens, the margin still preserving its transparency.

The interest of the case lies chiefly in the fact, that the foreign body (not in the least encysted) remained so long embedded in the eye without occasioning irritation, and also that the lens should have partially retained its transparency notwithstanding rupture of its capsule and the long-continued presence of a foreign body.—*Zehender's Monatsblätter für Augenheilkunde*, 1867, p. 36.

QUAGLINO ON HEMERALOPIA.

After referring to the chronic form of night blindness which we observe in connexion with pigmentary retinitis, Professor Quaglino describes minutely the acute form which is developed in eyes originally healthy and enjoying good sight. The subjects of this affection notice that their sight becomes obscured, as by a mist, at sunset, which obscuration increases until they are unable to perceive the moon or stars. In the evening, objects are only seen when illuminated by a bright artificial light. In a dimly-lighted room during the day the sight is also very dim. The pupils are dilated even in a bright light, indicating diminished sensibility of the retina. If neglected, the disease may spontaneously disappear on the approach of autumn, when the nights are longer and the sunshine less dazzling. It is apt, however, to recur in spring, being generally developed in March or April. When persistent, the obscuration continues during the day, the acuteness of vision diminishes, and the disease terminates in amaurosis. From an ophthalmoscopic examination of thirty soldiers affected with this disease, Professor Quaglino concludes that the hemeralopia is dependent upon a venous stasis of the retina, accompanied by serous infiltration of the retinal tissue, and of the fibres of the optic nerve forming the disc. As predisposing causes, he views such abnormal conditions of the abdominal viscera as favour venous stasis in the region of the superior cava. The exciting causes are the dazzling light of the sun, the white reflection from the ground, or the glittering one from water. He mentions three effective means of treatment,—seclusion of the patient for some days in a darkened room, fumigation with the vapour from sheep's liver (!), and the use of cod liver oil. The prophylactic treatment consists in protecting the eyes by smoke-coloured glasses.—*Ophthalmic Review*, No. 10, 1866 (translated from *Giornale d'Oftalmologia Italiano*).

DR SCHIRMER ON CONJUNCTIVAL AFFECTIONS, ASSOCIATED WITH DERANGEMENTS OF REFRACTION AND ACCOMMODATION.

Before the investigations of Donders into the conditions of the accommodation and refraction of the eye were made known, some of the most obstinate cases a surgeon had to deal with were those in which there was slightly increased injection of the conjunctival vessels without any other apparent pathological lesion. Astringent collyria afforded temporary relief; but on the least straining of the eyes, the vessels became again injected, the lids exhibited a reddened border, and the patient suffered from increased sensitiveness to light, On testing him with glasses, presbyopia, hypermetropia, or astigmatism, will be almost always detected, and with the use of suitable spectacles the conjunctival affection will disappear. In illustration, Dr Schirmer relates the case of a student, who, for above a year, had been only able to work for half an hour at a time on account of the supervention of the above-mentioned symptoms. On examination, Dr Schirmer found him to be affected with hypermetropia, and ordered him to use spectacles with convex glasses of suitable strength. A few days after the patient returned much improved, but still he could not work many hours consecutively. Further examination disclosed the existence of a considerable degree of astigmatism as well as hypermetropia. Appropriate convex cylindrical glasses at once removed the inability of the patient for continued work, and in a short time the conjunctival affection disappeared.

A similar condition of the conjunctiva after exerting the eyes occurs not unfrequently in children after scarlet fever, and in older chlorotic children from deficient power of accommodation. In convalescence from long-continued debilitating diseases, such as typhus and pneumonia, this condition also often occurs. With convex glasses they can continue reading without discomfort.

In this class of cases the correct treatment consists in nourishing diet, exercise in the open air, rest to the eyes, chalybeates combined with quinine, etc. The worst treatment to which the patients can be subjected is depletion, drastic purgation, low diet, confinement to the house, etc.—*Zehender's Monatsblätter für Augenheilkunde*, 1867, p. 114.

CASE OF DACRYOPS OR CYSTOID DILATATION OF ONE OF THE DUCTS OF THE LACHRYMAL GLAND.

This constitutes one of the rarest forms of tumour that exist in the eyelid. It arises from a collection of lachrymal secretion distending a duct of the lachrymal gland above an obstructed part. It is to be diagnosed from other similar growths by the fact that often simple pressure suffices to empty it of its contents, and that all circumstances which induce an increased secretion of tears cause an enlargement of the tumour. Dr Wecker relates a case of this nature, in which the growth was the size of a hazel-nut, presenting a slight rounded projection at the outer angle of the eye. On separating the lids freely, the tumour bulged forwards from under the lid as an elastic, translucent lobular growth. Dr Wecker abscised the anterior wall of the cyst, whereby a rapid cure was effected.—*Zehender's Monatsblätter für Augenheilkunde*, 1867, p. 35.

MR J. Z. LAURENCE ON REMOVAL OF THE LACHRYMAL GLAND FOR LACHRYMAL DISEASE.

This method of treating obstinate cases of epiphora from lachrymal disease—first employed by Dr Bernard—has of late been successfully employed in many cases by Mr Laurence. The first case in which he had recourse to this procedure was one of epiphora from obliteration of the canaliculi, the result of a burn by caustic soda, and in which measures to re-open the canaliculi had proved unsuccessful. The removal of the lachrymal gland in this case was productive of the best results. Four days after the operation, watering of the eye had ceased, nor was the eye unduly dry; and nine months after the operation the relief continued permanent. Other seven cases are related, in all of which permanent good results seem to have followed the operation. A curious point in connexion with this subject is, that the eyeball continues sufficiently moist after extirpation of the gland. Mr Laurence has found that when the gland was removed for abscess of the lachrymal sac, that the formation of pus in the sac ceased. He considers this operation applicable to all cases of inveterate lachrymal fistula where other methods of treatment have failed. His method of operating is to make a transverse incision three quarters of an inch long into the orbit below the upper and outer third of the orbital ridge. After a little dissection, the gland may be felt in the wound by the little finger, pulled forwards by a sharp double hook, and removed. Another method he adopted was to make an incision, as in the method described, and then to divide the external commissure of the lids with scissors. By connecting the outer ends of the two incisions a triangular flap is formed, which, being dissected up, exposes the lachrymal gland. Temporary ptosis generally followed the operation.—*Ophthalmic Review*, No. 10, 1866.

PARACENTESIS OF THE CORNEA.

Dr Williams, of Cincinnati, considers that we possess in this little operation a very precious means, not only of diminishing pain, but even of saving sight in some dangerous inflammatory affections of the eye. He has found it most efficacious in two classes of affections,—in painful ulcers of the cornea, with or without hypopion, and in iritis or irido-cyclitis. He relates two cases. One was that of a lady who had a deep, ugly ulcer of the cornea, with a collection of matter in the anterior chamber, and who had previously lost the other eye from chronic glaucoma. In this case, the repeated evacuation of the aqueous humor led to a cure, where otherwise Dr Williams is of opinion that the eye would have been lost. The relief experienced after each evacuation was most marked; and as soon as painful symptoms returned, the operation was repeated.

Locally, atropine was freely applied; while anodynes, etc., were administered internally.

The other case was that of a soldier with very severe iritis, in which local depletion and atropine had been used from the beginning of the attack, but where an extensive exudation of lymph into the anterior chamber had occurred. There was intense pain, considerable chemosis, and pericorneal injection. Recourse was had to paracentesis, by which a layer of lymph, as well as the aqueous humor, was evacuated. A great amelioration in the symptoms was the result, and the patient obtained a good night's rest. When the painful symptoms recurred, the paracentesis was repeated. In six days the lymph was completely absorbed, the pupil dilated, and the injection gone.—*Annales d'Oculistique*, tome lvii., p. 89 (extracted from *Transactions of the American Medical Association*).

MR T. P. TEALE ON THE RELATIVE VALUE OF ATROPINE AND MERCURY IN THE TREATMENT OF ACUTE IRITIS.

From a careful consideration of twenty cases of iritis, which he tabulates, he draws the following conclusions:—

1*st*, Iritis can generally be cured quickly and perfectly by atropine alone, or by atropine and mercury combined, without the aid of other remedies. He has not tested how far opium, blisters, leeches, and venesection may accelerate progress.

2*d*, The presence or absence of syphilis does not affect the question of treatment.

3*d*, Many, perhaps one half, of the cases of iritis, whether syphilitic or not, can be cured by atropine alone.

4*th*, Those cases in which atropine fails to dilate the pupil in twenty-four or forty-eight hours require mercury.

5*th*, When mercury is required, it ought to be introduced into the system rapidly.

6*th*, The mercury ought to be introduced by the skin, not by the stomach. When this drug is introduced by the stomach, the digestive powers are depressed at the very period when their healthy function is most needed.

7*th*, It is sufficient to give the mercury till the gums are slightly tender.

8*th*, In most cases, the constitutional effects of mercury, indicated by tender gums and improvement of symptoms, may be obtained on the second, third, or fourth days, provided the patient be confined to bed. Absorption of mercury by the skin appears to be much more rapid when the patient is confined to bed, than when he is allowed to go about as usual.

9*th*, Atropine should be used during the whole period of treatment, except where it causes great pain or increases conjunctival irritation, in which case it may be temporarily suspended, or dissolved in glycerine and applied to the skin.

10*th*, In cases requiring mercury, the coincidence of tenderness of gums, of relief of pain, and of the action of the atropine on the pupil, is almost absolute, even to an hour or two.

The solution of atropine employed is of the strength of two grains to the ounce. It is to be dropped into the eye six times, at intervals of five minutes, in the morning, and six times also in the evening. As soon as the pupil is fully dilated, as far as any adhesions will permit, the atropine is only applied once or twice a day, and continued at this rate as long as redness or tenderness of the eye remains.

The plan of mercurial ennunction employed, is to order the patient to lie in bed, and to wrap round each arm a broad piece of flannel well smeared with mercurial ointment. This is worn by the patient till the gums are slightly tender, or the disease begins to abate,—a small quantity of fresh ointment being added every evening. Rubbing in of the ointment is not considered necessary.—*Royal London Ophthalmic Hospital Reports*, vol. v., part 2.

PARAPHYMOTIC STRANGULATION OF THE EYEBALL.

Mr Jonathan Hutchinson relates the following curious case:—

Whilst standing in a crowd, a man had the end of a stick thrust "into his eye." The stick was at once withdrawn, and its possessor decamped. The patient went direct to the London Hospital, when it was found that his left eye had been completely ejected from its socket. The eyeball was literally on his cheek, and was very tightly strangulated by the everted eyelids. Attempts to reduce the eye were completely unsuccessful. It fortunately happened that for years previously the injured eye had been almost blind. Mr Hutchinson proceeded to remove it, by dividing the conjunctiva and muscles. On examining the excised globe, it was found that the optic nerve had been completely torn across, three-quarters of an inch behind the globe; and on exploring the orbit with the finger, the bone at the apex was found to be extensively denuded of periosteum. No fracture could be discovered. The patient was kept in bed, and ice applied to the scalp and eyelids. He recovered without any indications of arachnitis, and left the hospital in three weeks.—*Royal London Ophthalmic Hospital Reports*, vol. v., part 3.

Part Fifth.

MEDICAL NEWS.

BRITISH MEDICAL ASSOCIATION.

THE Annual Meeting of this Association was held at Dublin, on the 6th, 7th, 8th, and 9th of August, Dr William Stokes, Professor of Physic in the University of Dublin, in the Chair. The Addresses in Medicine and in Surgery are given below.

THE ADDRESS IN MEDICINE.

By Sir Dominic J. Corrigan, Bart., M.D.

MR PRESIDENT AND GENTLEMEN,—The President of this great Association has already welcomed you to Ireland. Let me feebly, perhaps, but with all my heart, echo that welcome on this the first occasion of our meeting here. My next duty is to thank you for the distinction you have conferred upon myself in requesting me to deliver the address of this day,—a distinction that would be a high one were it conferred by my own College,—high if conferred by the profession of my own country, but which now comes to me as a triple honour when presented to me by the profession of the United Kingdom. And among the bonds that unite the three divisions of this our kingdom together, there are none stronger than those of our profession, soaring in its exercise above all sectarian discords. We know no difference of race, or creed, or colour, for every man is our neighbour; and when we remember that the Redeemer, while on earth, chose the healing of the sick as one of the most impressive evidences of his divine mission, we must ever hold in respect the exercise of a profession that devotes its efforts to the same object.

On the walls of our old, and I hope seen to see it on our new, College Hall stands the motto, to remind us of this,

"ΠΑΡ'ΥΨΙΣΤΟΥ ΕΣΤΙΝ ΙΑΣΙΣ."

Perhaps the greatest, truest, and most convincing tribute that can be paid to the worth of the profession of Medicine is this, that when members of our profession have spent a long life in its exercise,—when on their death-beds,—when the past is a dream, the present a flitting moment, and the future an awful eternity,—they have thought the best use they could make of their wealth was to leave it to hospitals and schools of Medicine, where the profession they had so long followed would continue to be taught and to be practised. In our own city, we have only to look around us to see examples of this. On the north, one of the noblest piles of architecture in the city, the Rotunda Lying-in Hospital, devoted to the relief of suffering woman, was founded by a physician, Dr Mosse, who gave his fortune and years of labour to the work. Westward is one of our greatest hospitals, Stevens's, with upwards of two hundred beds, always open to the sick, founded by the bequest of a physician of the name. In another direction is the celebrated Carmichael School of Medicine, built from the bequest of a good and great man who has only lately passed from among us, distinguished as a great surgeon and teacher, who served his country, cured the soldier abroad, the civilian at home, and who left a large portion of his wealth to promote the teaching of Medicine, as the best boon he could leave behind him for fellow-man. Eastward we see Sir Patrick Dun's Hospital, one of our foremost schools of Clinical Medicine and Surgery, built and supported mainly by a fortune left by the first President of the College of Physicians under its present charter, granted by William and Mary. He was an Englishman, and Physician to William the Third, and that noble hospital, opening its gates to all comers in need of relief, stands a monument of charity on the part of its founder, and of reproach to us that while the Englishman, dwelling among us in the midst of all the bad passions of civil war, felt equally for all, and left this monument of charity to our people, "we never joined in love." A better future is, I trust, brightening for us, and when it comes, I think we may truly say, that no hands have done more than those of our own profession to grow the olive of peace and charity. I could adduce other instances, but these are enough.

We have in the meetings of this great Association, as laid down in the programme of its formation, and well put in the address of Dr Burrowes (now President of the Medical Council) to this Association in 1862, two "great objects at heart, the advancement of medical science, and the elevation of the social condition of our profession." We are thus at liberty to direct our efforts according to our judgment in the one or the other channel. I have chosen the latter; for these reasons, that medical science has been so ably and so exhaustively dealt with by my predecessors that I feel myself unable to add to what they have done; and, moreover, I well know there are many here more fitted to instruct me than I am to instruct them. I do not feel the same hesitation to direct my efforts in the other channel. Placed, as I happen to have been by the favour of the senate of the Queen's University, on the General Medical Council of the United Kingdom, I have been able to make myself better acquainted than I otherwise should have been with the several relations of the branches of the profession to one another, and to the great sphere of society of which it forms a part. I feel myself now, moreover, in a position somewhat such as a member of the House of Commons may be during recess, when he avails himself of the first opportunity of laying before his constituents and the public the experience he has acquired, the views which he entertains, and his explanation of the course which he has pursued while acting as a representative. I know sufficiently well the learning and the feeling of those distinguished members of the senate of the Queen's University who have done me the honour to elect me their representative, to assume that, although elected as their representative, they desire no exclusive adherence to special interests, but wish to have carried out whatever general measures are for the public good, and for the sustainment of the position and acquirements of the medical profession; for I am sure they feel as I do, that if the position and knowledge of the medical profession be not sustained, the community will be the greater sufferer of the two.

The social position of the profession, and the estimation with which its members are to be regarded by the well-informed with whom they are associated in society, depend on the good general education and professional skill evinced by them. These can only be secured for the good of the public by such legislation as will prevent the entrance into it of the ignorant and incompetent, and hence good legislation is inseparably connected with the position of our profession, and becomes a most important question for our consideration. For this reason, to some points in forthcoming legislation I shall now take the liberty of asking your attention. I am greatly strengthened in taking this line by the observations of our President yesterday in his opening address, received by you with acclamation, when with that emphatic philosophic earnestness peculiarly his own, he declared his conviction that the general education of young men going into our profession should not be inferior to that of the kindred professions—the Church and the Bar. It is almost to a day nine years since the Medical Act of 1858 received the royal assent, I cannot say, and I believe many will unite with me in thinking, that the results have been such as to satisfy us either as to the education or protection of the profession. Has the standard of general education been raised? I fear the answer must be in the negative. For a period, varying from one to two hundred years, or more, since their respective foundations, the University of Dublin, the King and Queen's College of Physicians in Ireland, the Royal College of Surgeons in Ireland, and the Apothecaries' Hall of Ireland, required a knowledge of Greek as a necessary part of the examination of candidates for their respective degrees or licences; and there is not a man who knows anything of the nature of our studies that will not say Greek should be a component in the education of every member of our profession; yet one of the first acts of the Medical Council under the Medical Act was to declare that a knowledge of Greek was not necessary, and it was only after a long contest I succeeded, as a compromise, in getting a resolution passed that it should be required after 1869. In the proceedings of this year, it has been further resolved that Botany be also excluded from the list of subjects for examination. It is idle to say that this only refers to a minimum of education. A minimum thus put forward is a sufficiency, and will be regarded as such by students and by licensing bodies. The tendency, then, I am sorry to say, appears to be to bring down the education to the lowest level, not to raise it to a higher. The preliminary education, moreover, of our students in general education, instead of being supervised by any one responsible body, is left almost to chance; for no less than eighteen bodies have the power of examining in art and science students going to the medical profession, and giving certificates, some in the United Kingdom, some in Canada, some in Tasmania, that such students are sufficiently educated in general acquirements to enter on the study of Medicine. I think it must be self-evident to every practical mind that such a system can never be depended on to ensure an adequate preliminary education. The several licensing bodies have no means whatever of knowing how those preliminary examinations have been conducted, nor often even the subjects of examination. These may change from year to year. Indeed, it was only after some time it was discovered that some of the bodies whose certificates of preliminary examination were recognised, did not make even Latin a necessary part of the examination.

It is stated in report of Committee in minutes of General Medical Council of 5th June 1867, "that the visitors of such examinations give in most cases a satisfactory report of the manner in which the examinations in general education are conducted." But if we look at the report from the Navy Board of the examination of candidates for direct commissions, we find such observations as these on education. Opposite the number of one candidate is this observation: "*Utterly failed in preliminary examination.*" Opposite the number of another: "*Failed in classical examination, declined to attempt to translate, and failed to write a prescription.*" Nor must these be viewed as isolated instances. Each candidate rejected for ignorance represents a group of others equally ignorant and incompetent, who have passed some of our licensing bodies, are now on the Registry as "duly qualified practitioners," and probably in possession of appointments throughout the country, bringing on themselves and the profession the contempt of all well-educated persons with whom they are necessarily brought into relation in social life, and practising Medicine to the hazard and probably the loss of human lives. The course which has been adopted of deputing to other bodies, far asunder and irresponsible, the examination of young men destined for our profession, is a great anomaly. The Horse Guards and Admiralty do not recognise certificates of education from other bodies. They know what they want, and they have their own examination to test it. The Civil Service examines for itself; but any examination, by almost anyone, or anywhere, is to be deemed sufficient for us.

I have before me the Rules of the Society of the Attorneys and Solicitors of Ireland of last year (1866), incorporated by royal charter, and signed by the names of men whose judgment must command respect: the Right Hon. F. Blackburne, the Right Hon. Chief Justice Monahan, and the Right Hon. Chief Baron Pigot. To enter the profession of a solicitor it is necessary that, before commencing his professional studies, the candidate, unless he has graduated in Arts at Oxford, Cambridge, Dublin, Durham, London University, or the Queen's University in Ireland, shall pass an examination in Latin, an examination in History, in Arithmetic, in Bookkeeping, in Geography, in English Composition and Dictation; and after November 1867, that Logic be added to the above courses, and the examination alone is recognised—that is, conducted by an examining body, the president and vice-presidents and members of Council, with a special examiner appointed by the Council. There is no entrusting here to peripatetic and irresponsible bodies scattered over the world the examination of young men going to the profession of a solicitor. Look at this simple and efficient mode of procedure of preliminary examination by a body that know precisely what they want, compared with our present system of entrusting the examination of our students to eighteen or more educational bodies profoundly ignorant of, and profoundly indifferent to, what our students require, and say which system is the better. Can we hesitate for a moment in coming to the conclusion that for students entering the study of Medicine there should be one uniform and sufficient preliminary examination, and that such examination should be under the control of a central authority in each division of the United Kingdom, defining what is wanted, and what the examination should be.

The Army authorities do not receive as evidence of proficiency in general education the certificate of any one of the eighteen or twenty educational bodies in the United Kingdom. We began with nine; we have now arrived at eighteen, including the reception of certificates from Canada to Tasmania; the list is increasing yearly, and the greater the number necessarily the lower the standard. The Navy Board examines for itself; the Civil Service examines for itself; the several Universities examine for themselves. There is no parallel instance that I know of similar to our system of taking certificates from almost every body; and the result is seen in the lamentable result shown forth in the Army and Navy returns of rejections, where we find candidates rejected for ignorance of the simplest branches of preliminary education. It appears to me to be worse than useless to proceed still in this way. It is evident that, under the present system, young men get into our profession who could not pass an examination for the place of a letter-carrier. What is to be done to remedy this sad state of things? Two courses occur to me: one would be to require that every young man, before he gets his degree, should have passed through a university course in Arts. This, I fear, would be found impracticable, however desirable. The other is, that in each division of the United Kingdom there should be a board of examiners, and that all young men, except those going through a course of arts or science in a university, should be obliged to have undergone an examination in general education before such board, either before the commencement of professional education, or within the first two years of medical study. This second plan would, I believe, be practicable and efficient. The principle on which I have ventured to deal with the subject of general education and examination applies similarly to the other great division—that of professional education. The same evils exist. We have in the United Kingdom nineteen licensing bodies, conferring no less than thirty separate licenses and fifty-three titles. The result is necessarily a downward tendency in competition. Wherever there is a great number of universities or licensing bodies with diplomas in the market, the competition must be downwards. It is notorious that students know as well in regard to their diplomas, as buyers do in regard to the articles of purchase, where they will get what they want on the easiest terms; they go there, and become the possessors of what they want—diplomas, it matters not good or bad, for the legal brand, in the form of a registry, declares, under Act of Parliament, that all are equal. The sad state of ignorance engendered by the downward competition has obliged the Army and Naval authorities to examine for themselves, for they cannot place reliance on the diplomas of our numerous licensing bodies, and could not, on the faith of the diplomas issued by them, entrust to their holders the lives of our soldiers and sailors. It appears to me that if our system be not altered, the civil authorities of the country must ignore all our licensing bodies, and, like the Army and Navy authorities, institute an examination for themselves. I should deeply regret to see this, but to this I fear it must come unless we bestir ourselves.

The General Medical Council has seen the evils I have pointed out, and has attempted to deal with them in two ways—both, I fear, ineffectual. The one is by issuing "recommendations," or, as they are sometimes erroneously called, "regulations," as to education and examination; the other, by "visitations of examinations." I will glance briefly at both. "Recommendations," as they are termed, are useless; for the Council has not the power, and, although nine years have now elapsed, has never ventured to attempt, to enforce them; while universities and colleges have fallen in with them, or disregarded them, just as they thought fit. It seems to me as if the General Medical Council instinctively felt it could never enforce its ordinances, or bring any of the licensing bodies before the Privy Council; for it has always taken care to designate them "recommendations." No one can be tried or punished for disregarding a "recommendation." A "recommendation" is merely an expression of approval; it is not an "order" or "regulation." If the board of this university were to issue a "recommendation" that the students were to assemble in this hall at ten o'clock every morning, that would be merely commending it to them for their approbation. The board could not summon them or punish them for not doing it. Yet this is just what the General Council has done. It has worded its ordinances in such a way that it has tied up its own hands; so that we may consider as mere idle talk the threats that, if such or such a body do not conform to such "recommendation," it will be summoned to appear before the Privy Council, and deprived of its power to issue diplomas.

The issuing of "recommendations" being thus a failure, another step has been taken, which is called "the visitation of examinations," both preliminary and professional, undertaken in order to ensure that examinations are sufficiently strict. The visitation of preliminary examinations is simply impossible, as the preliminary examinations may be held at uncertain times, and in all parts of the United Kingdom and our colonies, from America to Australia. We now come to the visitation of professional examinations, which it is supposed is to be an efficient supervision over nineteen licensing bodies in the United Kingdom, thirty different diplomas, and fifty-three titles. Believing that such visitation would be only a screen to conceal defects, and not an exposure of them, I felt myself constrained from the outset not to take any part in them. I will not trespass on you here with my reasons. I think it is only necessary on the present occasion to observe that visitations of examinations cannot command confidence, from this radical defect, that the several licensing corporations, through their representatives, report upon one another. Twenty-four members—for that is the number of the General Medical Council—either representing or intimately connected with nineteen licensing bodies, admit that these nineteen licensing bodies are not what they ought to be, that they stand in need of inspection; and they proceed to carry it out. How? By inspecting one another. A inspects B's establishment, and B inspects A's, and thus round twenty-four letters of the alphabet; and then they report upon one another reciprocally, as a distinguished member of the Council and of this Association has well observed, with a general interchange of courtesies. What would be thought of a report from twenty-four members of the House of Commons, inspecting and reporting to themselves on the suspected purity of one another's constituents? For not taking a part in the inspection, I have been denounced by a portion of the press and in another place as an "obstructive" to the progress of professional improvement. There are two kinds of recognised obstructives: one who openly obstructs a good measure, and another who obstructs a bad measure. But there is a third kind of obstructive to progress, worse than either of the other two: he who pretends to be ardent in progress, but has at heart no desire for it. There is an incident related in one of our popular sea-stories, of the mate of a cutter who imposed upon the simple minds of his crew by showing a great press of sail aloft, and, with loud trumpeting on deck, calling on all about him to admire how he carried on to forward the good ship on her way; but all the time he cunningly trailed a sail along under the lee-quarter, so that the good ship could make no way. I believe we have, among the most vehement supporters of visitations of examinations, such obstructives to deal with—seeming to carry on, but secretly taking care that no progess is made; for their object is, that we should remain stationary. Visitation of examinations is the sail under the lee. We must not let ourselves be blinded to admit, when a new Medical Bill is before the House, that the present system can ever be made efficient.

In the amended Bill that has been put forward by the Council, there is one clause that I make no apology for bringing under earnest attention. It is that the General Medical Council shall have a power to admit, *without examination*, to the Registry, and thus make them eligible for all appointments in the United Kingdom, the holders of foreign diplomas equally with our own graduates and licentiates, on satisfactory evidence being laid before it that those degrees or licences have been granted after a sufficient course of study and examination. The proposed clause will be found in the minutes of the General Medical Council of June 5 of this year. I hope the whole profession will seriously consider this proposed clause, and will unite with me in resisting it, not merely for their own sake, but for the public good. It is notorious that both in Germany and in America there are universities that sell their diplomas, just as they sell beer or Indian corn, to all who can afford to pay for them. Most of my hearers have probably seen the manifesto of the University of Erlangen, in which they stigmatise the statement I made to this effect in the Council as "void of foundation in all its particulars," and my reply, both published in the Journal of this Association of July 20th. In that reply I adduced instances of four German universities, in which I showed proof, by documentary evidence, that they conferred degrees *in absentiâ;* and that so low are their degrees held in their own country, that their diplomas did not enable the holders to practise there.. I have received other evidence since. A gentleman connected with the medical and literary press of London has placed a document in my hands, in which he certifies that an American agent called on him this present year with diplomas duly signed and sealed by one of the American colleges nine or ten years old; that he could have a supply fifteen years old if required; and that he had a variety in stock, price £20, and would allow a discount off as it was a matter of business. This gentleman is quite ready at any time to verify this memorandum, and to give his name.

I have within the last week received letters from two members of the profession, one of them a president of one of our Branch Associations, in which he encloses to me a communication from an agent in Glasgow, in reply to a communication for the purchase of a foreign diploma, and I am sorry to say he is an M.D. of one of our universities. The letter is so characteristic that I shall make no apology for reading it at length:—

"Ewing Place, Glasgow, 24th July 1867.

"MY DEAR SIR,—After having had the pleasure of your note of the 6th inst., I write you in direct course. I stated in terms of my said letter that no university but that of the State of Pennsylvania gave degrees of Medical Doctor *in absentiâ*, the cost being £32, 12s., and in full of all demands and delivered free. I also stated in terms of my said note that the university of Giessen of Hesse Darmstadt gave degrees of M.D. for £22 paid there, and £15, 10s. sterling paid here, and also in full of all demands. In either case I will cheerfully assist you or your friend in obtaining the object in view. As I have four new degrees to get at Pennsylvania next week, and other four at Giessen also, please send me £32, 12s. for the Pennsylvania degree, or £15, 10s. in part of the Giessen degree, and I will send all the requisites to you in course.

"I am, my dear Sir, very truly yours, M.D."

To give this epistle due dignity, there is inserted on the envelope—"On Her Majesty's Service." It is scarcely necessary to observe that I have in my possession the documents and the names. It is further to be observed with regard to some of the German universities that the same university gives two kinds of degrees—one on a *viva voce* examination, the other *in absentiâ*. This is abuse enough, but there is another ingenious subdivision of the *viva voce* examination. To any one of honest intelligence the phrase *viva voce* examination would convey that the candidate presented himself at the seat of the university, and was examined there by its authorities. Not at all; for in one of the documents in my hands the applicant, residing within this kingdom, was referred for the *viva voce* examination—to whom do you suppose? to one of their own graduates in the neighbourhood of the applicant, and the applicant was informed that on passing such *viva voce* examination and payment of £32 he was to have the degree.

It seems to me inexplicable in consistency on the part of our General Medical Council to institute visitations of examinations over our own Universities and Colleges of Physicians, and yet to propose to dispense with such in the case of the foreign universities, merely requiring evidence to be laid before them as to the course of study and examination required. Converted into plain words, it is this: We will not be content with any evidence or any statement from the universities of the United Kingdom, from our own universities; we will not rely upon those who vouch for you, nor trust your own statements; we will judge for ourselves; we will visit you and sit by at your examination; but, turning to the German universities, the Council say: We will not put you in the same category as the universities of our own country of Great Britain and Ireland; we can rely upon the testimonials you forward to us; we can believe what you say; and we will place your degrees on our Registry without visiting your examinations. One of the most extraordinary arguments I ever heard in support of admitting foreign diplomas without examination was the introduction of the principles of free trade into the debate. The argument was, that, by thus freely admitting such foreign degrees, there would be at length reciprocity, and those foreign states would admit ours, and thus, by our good and generous example, there would be a free interchange of degrees, as there is of all the other commodities of trade between states. It seemed strange to me that the advocates of this extraordinary proposition do not propose what would have been a simpler mode of extending to our profession the principles of free trade, viz., by abolishing all restrictions whatever, all degrees and licences, all education and examination, until at last, as Mr Gladstone (in his celebrated free trade speech at Paris) said of custom-houses, all universities and colleges would be only remembered as things of the past. As to procuring evidence before recognition that such and such foreign universities had abandoned their evil ways and instituted sufficient courses of study and examination, there would never be any difficulty in procuring testimonials. We all know that testimonials can be had as plentiful as blackberries, for anything, from a South Sea bubble to Solomon's spectacles. Even if we had the most satisfactory assurances that there would not be an abuse this year, we could have no sufficient guarantee that it would not occur next year. Let foreign diplomas be once put on our Register, under sanction of law as proposed, and they could never be removed, so great would be the legal difficulties in the way. I believe I am not wrong in saying that the holder of a foreign diploma from a university once recognised, could apply for a *mandamus* obliging the Council to show cause for such removal; and, as neither foreign universities nor holders of their diplomas would voluntarily criminate themselves, and as a foreign university could not be brought into a court of law in this country, the General Medical Council would be powerless. Another argument I have heard advanced in favour of the admission of foreign diplomas is, that there was a power to place foreign diplomas on the Register in the Act of 1858, and that the new clause was only continuing such a power. I cannot think this argument of any value. The power in the first Medical Act of 1858 to admit such diplomas was merely an act of grace, in accordance with the spirit and wording of every new regulating Act, that its restrictions should not have a retrospective action. For instance, in the Apothecaries' Act of Ireland in 1791, of England in 1815, in the charters of the College of Surgeons of Ireland and also in England in 1800, it was provided that persons practising from usage as apothecaries or surgeons at the passing of the respective Acts or Charters should be legally recognised in the new Act. In like manner, in the Medical Charities Act of Ireland of 1850, it was provided that all persons holding dispensaries in Ireland at the time of the passing of the Act, though not possessing any professional qualification whatever, should be recognised as "duly qualified" and placed on the Register. But this power, or right, ceased very properly within one year after the passing of the Act; and such persons could not now be registered or recognised as qualified to hold appointments. A similar power was given under the Medical Act of 1858, to protect the rights of holders of foreign diplomas then resident and practising; but it never was the intention of this Act, any more than in the previous ones I have named, to continue such recognition. The protection was a mere act of grace in all the cases, and the very introduction of it, with limitation, was in itself proof that it never was intended to introduce it anew.

The French law is a very fair one, and it was on it that I modelled my amendment of June 5th of this year, with regard to the admission of foreign diplomas, at the last meeting of Council. It was to this effect: that the holder of a foreign diploma, desirous of being placed on the *Register*, should be entitled on such diploma to present himself for examination to some one of our licensing bodies; and, on passing its examination and obtaining its diploma, to have his name placed on the *Register*. It was urged against this, that all the licensing bodies might enter into a conspiracy, like a trades union, to deny him an examination; and I therefore, although I thought the objection groundless, introduced an addition that, in the event of licensing bodies refusing him an examination, it would then be lawful for the General Medical Council to exercise their discretion in registering him. This is the present law in France. It is liberal towards men educated in foreign countries, while it protects the people from ignorant practitioners. The Faculty of Medicine in France says to every foreign physician desirous of practising there, "We cannot enter into the merits of foreign universities, their shortcomings, or their sufficiencies. We will not, however, subject you, the holder of a foreign diploma, to undergo the four years of education we require from students; but we will require evidence that you may be trusted, equally with our own physicians and surgeons, with the care of life; and the only evidence we can rely upon is examination, and to that you must submit." If we in the United Kingdom go beyond this, we shall let loose upon the public ignorance and imposition. It has been said that Government desired to have foreign diplomas recognised without examination, and that they would not take up the proposed amended Bill without such a clause being sent up from the Medical Council with its approval. In this country, the Government of to-day may not be the Government of to-morrow; and therefore the opinion of one Government is not that of another. But, whatever party might be in power, I cannot think that any Government or any Secretary of State, when aware of the true nature of foreign diplomas—of the facts I have adduced to-day—would support the proposition of admitting foreign diplomas without examination; but, were it even otherwise, I believe it would be better to have no amended Bill at all, than a Bill with such a clause. I would go further, and say, better for the public to have the Medical Act of 1858 rescinded altogether, and the registering abolished, leaving it, as before, to the public to judge for themselves of qualifications, than have those foreign diplomas legally placed beside our own. Under any circumstances, let us not be parties to treat as trifles the lives of our fellow-creatures. Let not ours be the hands to fix the stamp of true gold on German silver or American greenback; and I am sure, in so acting, we shall have the support of all well-educated Germans and Americans. Much is talked of amending clause 40 of the present Act, so as to give greater protection to the rights of qualified practitioners; but of what use would such protection be, if, while we make that clause more stringent, we open another and a wider door for the entrance of the purchasers of foreign diplomas? I have dwelt thus long on the proposed admission of foreign diplomas, because I think the question of vital importance, and equally concerning the public and ourselves.

I now come to another point which I consider of great importance in the introduction of an amended Bill, and that is the constitution of the General Medical Council itself; and I think it argues much for the supineness or the good nature of the profession in the United Kingdom that they have borne with its present constitution so long. I believe we all recognise this principle in our constitution, that there should be no taxation without representation. But who pays the taxation that supports the Council? You do; the whole profession that I see around me. The bodies that send their representatives to the General Council pay not one shilling towards it. By whom are the Council elected? Not by you; not one of the whole Council is your member. The Council are no more representatives of the profession than would the members of the House of Commons be representatives of the people if they were elected by the several corporations throughout the kingdom. If members of the House of Commons were elected in Dublin, London, and Edinburgh, by the respective lord mayors and corporations, they would surely not be representatives of these cities or of the people. The members of the General Medical Council, with the exception of a very small proportion nominated by the Crown, are the representatives of medical corporations, but not of the profession. These corporations keep the tollgates through which candidates are to pass, and they receive the fees for graduation; but, except on some very rare occasions, take no further interest in the profession. In the Queen's University, Convocation—that is, the graduates who have taken out degrees and are engaged afterwards in the battle of life in their several professions—are entitled to elect one-fourth of the whole number on the Senate or governing body. In the London University, Convocation elects half the Senate, for, on every second vacancy, it sends forward three names, out of which the Crown cannot travel. Such members are of the greatest importance, for they bring to the Senate or governing body the best of all knowledge—the *knowledge of experience*, the knowledge of what has been done, and of what is still required and yet remains to be done. It brings into the Senate the practical experience of the graduates from every phase of life. However estimable may be the members sent up by medical corporations as at present, however willing they are to do all in their power, they do not draw their knowledge from a sufficiently wide field. There can be no difficulty in introducing this element of representation. The voting-papers, as used at present in university elections, furnish the means. The Registry gives the names and addresses of those entitled to vote, just as the Calendar of an University gives its list of voters; and thus the members of the profession in England, Scotland, and Ireland could each without difficulty elect the number of representatives allotted to each; and those representatives of the profession, in direct communication with the whole working body of the profession, would bring into the General Medical Council a stock and a kind of information the Council cannot command under its present constitution.

I have long thought of this alteration in the constitution of the Council, and it is because long thinking has strengthened the conviction of its necessity in my mind that I have taken this opportunity of bringing it before you. I heard it said here yesterday, in debate, that if additional members were added, the number on the Medical Council and the expense would be too great. As to the expense, I think that should be borne by the parties who send representatives. Let the Crown and the corporations pay for theirs. You now pay for all. As to number, I quite concur in the view that the number is already too great; but instead of all members of Branch Councils being also members of General Council, let the General Council be composed of delegates sent by the Branch Councils, as Faculties in Universities send delegates to constitute a Central Board, and the number will then be not half its present amount. I would rather not have any legislation for some time than have the patchwork legislation that has been going on. We have already had five Acts passed since 1858. We are tiring the House of Commons; let us not go forward again with another patchwork Bill, but with a broad and well-considered measure. How is this to be done? is the next question. Two ways present themselves; one is that a draft of an amended Bill should be drawn up, as on former occasions, and that every corporation or university, every general and branch association, should press its own amendments during its progress through the House. I am not in favour of this. It was thus the present Medical Act was passed in such a shape that one of our most learned judges has declared in open court that it must have been drawn up by some one who knew nothing of law, and that neither judge nor lawyer could understand it. Votes of members would be obtained in support of this clause or that, not on its own merits, but on the influence brought to bear upon members; and members themselves might support or reject an amendment influenced by partial representation, or even by considerations of support to be obtained at some coming election. We should "meet again"—"in thunder, lightning, and in rain." Again stand round the cauldron with "Double, double, toil, and trouble."

Another way, and I am in favour of it, is that a Royal Commission should issue to report upon the present state of the law in regard to medical education and qualification, and that legislation should be founded on its report. I should much prefer a Royal Commission consisting of members of the medical profession and men of scientific acquirements, to a Select Committee of the House of Commons; for the members of a Royal Commission would almost certainly be persons possessed of knowledge out of the profession, and they would have the assistance of some members of the profession, as members of it; while members of the House of Commons, appointed on a Select Committee, might possess very little, if any, knowledge whatever on the subject. However, either might answer, and the advantage of such previous step would be that we should be able to know and to consider fully the various views put forward previously to the introduction of a Bill. Were such a commission or committee appointed, its labours would be light and short if each corporate body or association, or several together, should they agree, would lay their views, in form of a document, before the commission, which would then, like a brief, furnish the text for the examination of witnesses in support or against the views put forward. As far as I have been able to bestow attention on details, the changes I should like to see effected would be these:—

1. That the General Medical Council should be altered so far as to allow a certain proportion of its members to be representatives from the members of the profession resident in England, in Scotland, and Ireland, each division of the United Kingdom furnishing its proportion to the Council as at present.

2. That this Central Council would perform all duties as at present, and be a court of appeal from the Branch Councils.

3. That the Central Council should have power to lay down, subject to the approbation of the Secretary of State, a code of regulations, both as to preliminary and professional examination, and that all graduates and holders of licences or degrees from our several corporate bodies should be subject to such examination before being permitted to hold any public appointment, supported wholly or in part by public grant. I would exempt, as the regulations of the attorneys and solicitors, etc., do, graduates in Arts of universities from the preliminary examination; and I would not give the Central Council

any power to lay down any code of education. I would leave to the several licensing bodies full privilege to suit education to the circumstance of each division of the kingdom.

4. That the Branch Councils should appoint a board of examination for each division of the kingdom, and give to each candidate who passed a certificate to that effect.

This would extend to the public and to the sick poor of our country the same protection against ignorance and incompetency that is at present afforded to our soldiers and sailors by the regulations of the Army and Navy authorities. Its effect on our licensing bodies would be beneficial. There would then be a competition among them; not, as at present, to lower the standard of education and examination in order to sell their diplomas; but a competition among them to raise their standard, so that candidates, who would afterwards have to undergo the test examination, would seek the body that, by affording high education and examination, insured to its graduates or licentiates the best security for passing the test examination.

The good effects I should hope to see from such a plan as I have sketched would be, first, the advantage to the public of having well educated practitioners for the medical care of all classes, poor and rich; secondly, benefit to the profession itself by the exclusion of ignorant and incompetent persons, who now, entering into competition for public appointments with the well informed, lower the rate of payment for all. Such persons would henceforward find their own level in other pursuits requiring less education and less knowledge than ours.

I am not wedded to details. I see the present state of the law is injurious to the profession and to the public. I give you the thoughts that have arisen in my mind, after some years of close attention to the working of the present laws. I feel how important it is that the next session of Parliament should not come upon us unprepared. My views may be wrong in some particulars, or in all, but I shall be well satisfied if the observations I have made here to-day awake your attention to the subject; for then from you will come a brighter light to guide us on our way. Mainly to you, and to our own Irish Association in conjunction with you, I now look for the intelligence and energy that will bring forth a measure good for the public and good for the profession; for the true interests of both are and ought ever to be identical.

THE ADDRESS IN SURGERY.

By Robert W. Smith, F.R.C.S.I., Professor of Surgery in the University of Dublin.

Gentlemen,—When the eye wanders over this vast assembly collected in this noble hall, what thoughts crowd upon the mind! How the imagination is carried back to times far remote! Three hundred years have rolled over, and become engulfed in the fathomless abyss of eternity, since that proud and mighty monarch whose queenly gaze is fixed upon us founded this now time-honoured University. What a mighty mass of intellect has it fostered and matured! What a mighty host has it sent forth of men pre-eminent in every department of knowledge—men whose fame has shed an undying lustre upon the seat of their education; men whose fervid oratory has adorned the Bar, whose fervid eloquence has enchained listening senates; men whose works, marked by poetic elegance of language, by correctness of sentiment, by maturity of judgment, have adorned the age in which they appeared! Numerous have been the assemblies of the great and the learned that have been held within these walls; but, upon this auspicious occasion, which should be marked *meliore lapillo*, the eye rests, for the first time in the history of the University, upon an assembly of the members of our profession collected from the three kingdoms, and including representative men, the magnates in every department of Surgery and Medicine.

This is, perhaps, as fitting a moment as I could select to return my warmest thanks to the Board of Trinity College for the cordial and honourable reception they have given to the members of the Association, and to the Provost in particular, for the earnest desire he has shown to advance the objects of the meeting. He has, indeed, inaugurated his university reign by an act which the medical profession in Dublin will ever gratefully remember.

It is no easy task to address such an assembly as this in a manner worthy of the occasion; and, when I received the invitation of the Council of the British Medical Association to deliver the address in Surgery on the occasion of this their first visit to Dublin, I felt, I confess, somewhat embarrassed. On the one side, there was the desire to take a prominent part in a learned assembly of my profession, and the hope that I might be able to bring forward something of interest; on the other, there was the conviction that the delivery of a general address, such as the majority of those heretofore pronounced at the opening meetings of this distinguished Association, was as much beyond the sphere of my ability as it was unsuited to my tastes. But when I was informed that I was at liberty to adopt any course I preferred, I no longer felt myself justified in declining the proffered honour, more especially as I felt convinced that I would have the benefit of a partial and indulgent audience, even though it was found that I possessed neither the pen of a ready writer nor the tongue of the fluent speaker. Perhaps, however, the calm consideration of a practical subject of acknowledged importance may be found to possess a real scientific value.

Before entering, however, upon the more immediate matter of my discourse, I am anxious to allude to a subject which has long been to me a source of regret. I allude to the almost systematic neglect upon the parts of the junior members of the profession of the writings of the surgeons of the past generation. It is no doubt true that, since they wrote, Surgery has made great advances both as an art and as a science; though but thirty years have elapsed since a distinguished surgeon and an accomplished scholar pronounced the severe judgment that Surgery, as a science, might be supposed to be buried in the icy fetters of the Arctic pole; that no noontide beam had thrown its horizontal ray across this frozen region, to intimate that the night of days or weeks was ended. There is now, at all events, no ground for this heavy sentence. The clouds of this Cimmerian darkness have rolled away. The stream of knowledge which, as the eloquent and lamented Graves has expressed it, not many centuries ago, toiled painfully to wear away or avoid the obstacles that impeded its course, now, fed by a thousand new sources, flows along deep and rapid, sweeping away every obstruction and defying all human opposition.

What was formerly the termination of a science is now but its commencement; what was formerly deemed unattainable is now elementary; so that it is impossible to predict how far improvements may be carried. A short and transitory existence has been allotted to our bodies; individuals die and generations pass away, but the common intellect of mankind fears not the same fate, shares not the same brief mortality.

In modern times, Surgery has advanced, in some departments, with giant strides, and in all its progress has been steady and uniform. Operative Surgery has undergone vast and solid improvement. Ovariotomy has become an established practice. Subperiosteal resection has opened up a new field in the domain of what has been called Conservative Surgery. The crushing of the stone has almost superseded lithotomy. Pressure has, to a great extent, supplanted the ligature in the treatment of aneurism. Acupressure has deprived hæmorrhage of its terrors. The endoscope, the laryngoscope, the ophthalmoscope, have each and all shed the brightness of their beams upon the obscurist diseases, and illuminated their darkest depths and inmost lurking places with their lustrous light. The calculus lies exposed in the bladder; the stricture is patent in the urethra; the polypus in vain tries to hide itself in the ventricle of the larynx; the delicate thread-worm fruitlessly coils itself in the deepest chambers of the eye.

But all this affords no justification for the neglect of the writings of our forefathers so prevalent in the present age. From my long experience as a lecturer and as an examiner, I have no hesitation in saying that not one student in a hundred ever reads the writings of Pott, of Hey, of Abernethy, of the Bells, the Monroes, of Collis, and a crowd of other master minds that have stamped their fame upon the history of Surgery as indelibly as those of Raw, of Glaser, of Soemmering, of Cotunnius, Fallopius, Eustachius, that glorious band of anatomists, are engraven on the temporal bone; a monument which, *ære perennius*, will last as long as a human being exists on the face of the earth, as long as the world endureth.

If the descriptions given by the authors to whom I have alluded were either insufficient or incorrect, I could understand their being cast aside. But is this so? Has anything been added to our knowledge of Pott's fracture, of Pott's caries, of Pott's gangrene, of Pott's cancer? Do we know anything more of Hey's luxation, of Hey's internal derangement of the knee-joints? I do not think so.

Independent of the valuable information they contain, the works of the authors of the past generation repay the reader by the correctness of their style, the terseness and succinctness, and at the same time the clearness and fulness, of their descriptions. There is no inflated language; no giving to self an undue prominence; no magnifying of trifles; no appropriation of merit which might not be justly claimed. They wrote with a pure object, the advancement of science and the benefit of mankind. There is still another important feature in their works: they are the results of large and long experience; there was no hurrying into print with some ephemeral production; no rushing into authorship in the hope that experience would follow; no premature publication of cases that had not terminated, or of operations whose final result was not yet determined.

I cannot, therefore, but deeply regret that it has become so little the fashion (especially among students) to read the works of these authors; and it is much to be lamented that the system of private instruction has so completely superseded almost every other source of information. It may, perhaps, be thought out of place to make any allusion to students on such an occasion as this, and before such an assembly; but the members of the Association should recollect that a large proportion of them are lecturers or clinical teachers, and that their influence is great in guiding the studies of those entrusted to their care. How truly has it been said, that the British clinical teacher occupies a post of heavy responsibility; that he is an instrument for good or for evil that it is fearful to contemplate, and exercises an influence without parallel in importance and extent.

Were I to carry my hearers back to more remote ages, I think it would be found that the neglect of the works of the ancients was almost universal, and yet they abound in precepts that modern science has failed to set aside. Time would fail me were I to enumerate all the modes of treatment, operations, etc., which are to be found in the works of the old authors, which have of late years been brought under the notice of the profession clothed in all the glittering charms of novelty. I shall content myself with one example, and it is a remarkable one. The arresting of hæmorrhage by acupressure was described by Johannes de Vigo of Genoa, who flourished in the 16th century. It is a custom with some people, he says, to tie the veins and arteries, when opened, with a needle and thread. "Modus autem ligationis. Eam aliqui efficiunt intromittendo acum sub venâ, desuper filum stringendo." Is not this Sir James Simpson's third mode of acupressure? This, however, does not, in the slightest degree, detract from the merit of the distinguished baronet, nor does his renown rest upon a solitary foundation. The man whose genius made use of the anæsthetic properties of chloroform for the annihilation of pain, needs nothing more to transmit his name to distant ages. He has raised for himself a monument which will endure as long as human pain and human suffering are permitted to exist. These ancient fathers of Medicine have quaintly, but truly, been compared to giants, the Patagonians of the time, who, taking us up in their arms and elevating us above their heads, have disclosed to us countries and prospects that they themselves never could discover.

The practical subject, to which I am anxious to direct the attention of the meeting, comprises the class of injuries known by the title of "Epiphysary Disjunctions." I have selected it for many reasons, amongst which I may mention the numerous instances in which I have seen errors of diagnosis committed regarding them; the serious results of such mistakes; their being either but slightly noticed or altogether omitted in our systematic works on Surgery; the absence of any special treatise on the subject; and the ignorance respecting them displayed by the continental writers. Even Nélaton, who may be truly said to wield at present the sceptre of Surgery in France, has said that the materials for a complete exposition of these injuries are wanting; that we have nothing to deal with but assertions unsupported by proofs and cases destitute of value, because destitute of details; and he sums up his brief remarks by the erroneous assertion, that the signs which attend them are the same as those which indicate the existence of fractures in their immediate vicinity. Moreover, in the *Gazette des Hôpitaux* for the year 1865, there is recorded a discussion at the Surgical Society of Paris, in which some of the most distinguished members stated that these injuries could not be diagnosed with certainty, while others (including Chassaignac) doubted that they ever occurred. In my opinion, they constitute a class of injuries the diagnosis of which can be formed (by the surgeon familiar with the anatomy of the epiphysis) with more facility and a greater amount of certainty than that of any other variety of fracture. Moreover, they possess this special peculiarity (at least as regards the shoulder, elbow, wrist, and ankles), that, although they are accompanied by many signs and symptoms, the aggregate of which establish the nature of the injury which the bone has sustained, there is a single sign which, by itself, is pathognomonic of the disjunction of the epiphysis.

The chief difficulty I have to contend with is, to do justice to the subject, and at the same time avoid the appearance of attempting to instruct those who are my equals in all things, my superiors in many.

When the surgeon is called upon for his opinion respecting the nature of injuries occurring in the vicinity of the larger joints in early life, he will find a knowledge of the anatomy of the epiphysis of the greatest importance. And yet it is a description of knowledge seldom imparted to the student; the anatomical teacher usually passing over lightly or altogether the peculiarities which characterise the oseous system in the young subject.

I have elsewhere pointed out the error committed by Vidal and other writers, in supposing that the tuberosities of the humerus belonged to the shaft of the bones, and shall now endeavour to show that a similar error has been committed with respect to the lower epiphysis of the humerus, and that those authors who have written upon the subject of injuries of the elbow-joint have confounded with each other fractures *above* the condyles and disjunction of the epiphysis, from ignorance of the anatomical fact, *that the lower epiphysis of the humerus does not include the condyles, which belong entirely to the shaft of the bone.* The epiphysis includes nothing but the trochlea and the capitulum. The fundamental mistake of placing fracture through the line of the epiphysis among supra-condyloid fractures (as has been done by Malgaigne, Vidal (de Cassis), Dupuytren, and others, has involved the equally glaring error of distinguishing these two injuries from luxation of both bones backwards by the same diagnostic sign, viz., the loss of the normal relation of the olecranon process to the condyles of the humerus.

In the *Gazette Médicale* for 1834, Rognetta has published a series of elaborate memoirs upon the traumatic divulsion of the epiphysis; but, when speaking of that of the lower extremity of the humerus, he says that the condyles are detached and drawn backwards along with the bones of the forearm.

Professor Smith having read extracts from the works of the different authors alluded to, proceeded to say :—" The preceding extracts are sufficient to show that disjunction of the lower epiphysis of the humerus is an accident which has hitherto been confounded with fracture directly *above* the condyles, an error from which it may, I think, be inferred that the exact line of junction of the epiphysis with the shaft is not generally known to surgeons. At all events, it is manifest that this line has been supposed to traverse the bone *above* the condyles; whereas the anatomical fact is, *that those processes belong exclusively to the shaft of the bone, and form no portion whatever of the epiphysis, which comprises only the capitulum and the trochlea*, the capitulum, or radial portion, being developed long before the trochlea, or ulnar portion; a fact, the knowledge of which is of practical importance in the diagnosis of fracture through the line of junction of the epiphysis with the shaft, or in other words, infra-condyloid fracture.

The signs which characterize this lesion are such as to permit of its being readily confounded with fracture above the condyles, or with luxation of the forearm backwards. For instance, the forearm is flexed, the hand is in a middle position between pronation and supination. The olecranon loses its normal relation to the condyles, the breadth of the joint is increased from before backwards, the lower end of the humerus projects in front, and two osseous tumours can be felt posteriorly.

As the loss of the normal relation between the olecranon and the condyles renders the separation of the epiphysis peculiarly liable to be confounded with dislocation of the radius and ulna backwards, I shall briefly mention the signs, by availing ourselves of which we materially lessen the chances of confounding it either with luxation or with fracture immediately above the condyles.

In the case of disjunction of the epiphysis, the transverse diameter of the tumour which can be felt projecting in front is equal to that of the opposite humerus, measured anteriorly from condyle to condyle. In this respect, the injury differs from fracture above the condyles. Again, the outline of this osseous tumour is rounded, presents to the feel none of the irregularities of an ordinary fracture, and upon its inferior surface neither trochlea nor capitulum can be distinguished. But the most striking feature in which it differs from luxation, and which I consider pathognomonic of separation of the epiphysis is, that when the joint is examined posteriorly two osseous prominences are seen and can be felt distinctly; they are both placed above and behind the plane of the condyles, but are themselves situated (if the patient be not more than six or eight years of age) nearly upon the same level. At a more advanced age, the distance between them increases in consequence of the increased development of the interval which is formed by the olecranon.

At no period of life, however, at which it is possible for the accident in question to happen, is the vertical distance between the two tumours so great as it is found to be between those which, in cases of luxation of both bones backwards, constitute so marked a feature of the injury. In the latter accident the distance averages an inch and a half, while in the former it seldom exceeds three quarters of an inch; the external tumour in this case being formed, not by the head of the radius, but by the capitulum of the humerus, still surmounting the head of the radius. There is a cast of this injury upon the table, taken from the arm of a boy aged twelve, who was under the care of Dr Hughes in 1847. He was thrown down with great violence, and having, in the act of falling, stretched out his arms to save himself, the boy who threw him down fell with all his weight across the back of the extended limbs. I have never had an opportunity of examining post mortem a joint which had sustained this accident, but I have seen, under the care of the late Dr Hutton, in the Richmond Hospital, a patient in whom the injury was compound, the extremities of the radius and ulna, surmounted by the epiphysis of the humerus, projecting through a large transverse wound.

Enough has been said to show that implicit reliance is not to be placed upon the loss of the normal relation between the olecranon and the condyles as a means of distinguishing between luxation of the forearm backwards and fracture of the lower extremity of the humerus, and I think I have proved that there is an accident of the elbow, in which the bones of the forearm lose their natural relations to the condyles, and yet that accident is not necessarily a dislocation, but may be a fracture through the line of the lower epiphysis of the humerus.

I shall dismiss the consideration of this injury by stating as concisely as possible the points of resemblance and dissimilarity between it and the two injuries with which it is liable to be confounded, viz., fracture immediately *above* the condyles, and luxation of both bones of the forearm backwards.

The symptoms which belong to it, in common with fracture above the condyles, are the following:—Shortening, crepitus, the removal of the deformity by extension, and its tendency to recur when the extending force is relaxed; the presence of an osseous tumour in front of the joint; the increase in the antero-posterior diameter of the elbow. It differs from the supra-condyloid fracture in the greater transverse breadth and regular convex outline of the anterior tumour; in the existence of two tumours posteriorly; in the loss of the normal relation of the olecranon to the condyles. It resembles dislocation of both bones of the forearm backwards in the following particulars:—The transverse diameter of the anterior tumour is the same in each case; so also is the antero-posterior breadth of the elbow; in both the olecranon ascends above the condyles, the limb is shortened, and two osseous prominences can be distinguished posteriorly. It differs, however, from luxation in the existence of crepitus, in the tendency of the deformity to recur, and in the circumstances of the anterior tumour being destitute of trochlea and capitulum, and the two posterior tumours being nearly on the same level.

The disjunction of the lower epiphysis of the tibia is undoubtedly among the rarest in this class of injuries. I am not aware of any well-authenticated example of it having been placed upon record, with the exception of one that I published myself in 1860. A cast of the limb in this case lies on the table, and beside it another of a luxation of the tibia forwards on the ankle. The resemblance which they bear to each other is, indeed, very striking.

The patient was a boy, aged 16 years. While leaping, he fell with his right foot doubled under him and forcibly extended on the leg. I did not see him until six months after the occurrence of the accident. At first sight, the case might readily have been mistaken for one of luxation of the inferior extremity of the tibia forwards. The normal curve of the tendo Achillis was greatly increased, and the lower end of the tibia seemed to project considerably in front of the normal position of the ankle-joint. The foot was a little extended on the leg when at rest, but the boy had the power of flexing it; and, when standing, he was able to place the sole flat on the ground. The fibula was uninjured. A very short examination was sufficient to show that the injury was not a luxation of the tibia forwards at the ankle. The integrity of the fibula, the comparative freedom with which the motions of flexion and extension could be performed, the perfect application of the sole of the foot to the ground in walking, were all circumstances opposed to the idea of a true luxation existing. The internal malleolus was placed further back than natural, being on plane posterior to the margin of the projecting portion of the tibia; and the distance between it and the tubercle of the tibia fell short of that between the articular margin and the tubercle of the opposite side by more than a quarter of an inch. From all these conditions, taken in connexion with the age of the patient and the mode in which the injury occurred, no rational doubt could be entertained of the case being one of separation of the lower epiphysis of the tibia, and partial displacement of that process backwards with the foot. I think we are tolerably safe in saying that the pathognomonic sign of this injury is, that the internal malleolus preserves its natural relations to the foot, but not to the leg or outer ankle; while, in the case of luxation of the lower end of the tibia forwards, the reverse occurs, the normal bearings of the inner ankle to the foot being lost, while those to the leg are preserved.

Having, in my work on Fractures, written at some length upon the subject of disjunction of the superior epiphysis of the humerus, I shall upon the present occasion allude to it very briefly. I have already mentioned the anatomical error into which some have fallen, of supposing that the tubercles of the humerus formed a portion of the shaft of the bone; and it has been to them a matter of surprise that, in cases of separation of the epiphysis, osseous union should occur,—the head of the bone being, according to their statement, detached from all connexion with living structures. Vidal (de Cassis) has observed that the occurrence of osseous union would be easy to conceive, if the head of the bone formed one body with the tuberosities. Had M. Vidal examined in the young subject the situation of the line of the epiphysis, he would have learned the simple anatomical fact that, in the injury under consideration, the tubercles formed a portion of the superior fragment, and that the epiphysis comprised not only the head of the bone, but likewise the entire of both tubercles, with that portion of the bicipital groove which is situated between these processes; and he would not have stated, as he has done, that, in cases of separation of the epiphysis, the *lower* fragment was acted upon by the supra-spinatus and infra-spinatus; for he would have seen that these muscles were attached to the superior fragment.

Fracture of the humerus through the line of its superior epiphysis is an accident of frequent occurrence; but it is not difficult to recognise, for the deformity which accompanies it is of a very striking character; and its most remarkable feature is an abrupt projection situated just beneath the coracoid process, and caused by the upper end of the lower fragment or shaft of the bone, drawn inwards by the muscles constituting the folds of the axilla. There is but little displacement as regards the length of the bone; for the extremity of the inferior fragment is seldom drawn so far inwards as to enable it to clear completely the surface of the superior.

This remarkable and abrupt projection does not present the sharp irregular outline of an ordinary fracture. On the contrary, it feels rounded, and its superior surface is smooth and slightly convex. The axis of the arm is directed downwards, outwards, and backwards. By pressing the projection of the lower fragment outwards, and directing the elbow inwards, the deformity can be easily removed, but of course recurs when the parts are abandoned to the action of the muscles. In short, the separation of the superior epiphysis of the humerus is so marked an injury, that no moderately well informed surgeon will be likely to confound it with any other incidental to the shoulder. Its pathognomonic sign is the infra-coracoid projection, so well seen in the numerous casts upon the table.

The separation of the lower epiphysis of the radius is also an injury of frequent occurrence, and is interesting from its liability to be mistaken for Colles's fracture, or for fracture of both bones close to the wrist. Our systematic works are remarkable for the paucity of the information they contain respecting it. Malgaigne speaks of it as the most common of all the epiphysary disjunctions; yet he has given no description of its external signs, or of its anatomical characters. He has merely alluded to the cases mentioned by Cloquet, Roux, and Johnston. The injury resembles Colles's fracture in the loss of the power of rotation, in the existence of a palmar and a dorsal tumour, and in the increase of the antero-posterior diameter of the limb at the seat of injury (not always, however, well marked); but differs from it in the absence of that singularly distorted and twisted appearance so characteristic of Colles's fracture, and which is owing to the lower fragment of the radius being drawn to the side of supination, as well as displaced backwards. The epiphysis passes directly backwards, without any tendency to supination. There is no elevation of the styloid process; so that the radial border of the forearm does not present the curved outline so frequently seen in Colles's fracture. In the last named injury, the dorsal tumour is usually more evident than the palmar, and the sulcus which limits it above passes obliquely downwards and inwards; but, when the lesion of the bone traverses the line of junction of the epiphysis with the shaft, the palmar tumour is by far the more striking of the two; and both tumours take a transverse direction, so that there is none of the appearance of obliquity which so many cases of Colles's fracture present. It is more readily confounded with fracture of both bones close to the wrist, there being in each case, occupying the same position, and presenting to a certain extent the same form, an anterior and a posterior tumour. There is a similar increase in the antero-posterior diameter of the forearm, and a similar impairment of the functions of the limb. In the case of fracture of both bones, however, or (to speak more accurately) separation of the radial epiphysis and fracture of the lower end of the ulna, the deformity is much greater, and resembles that observed in cases of luxation of the carpus backwards—an injury to which separation of the radial epiphysis bears but little resemblance. Moreover, in the latter injury (epiphyseal disjunction), the anterior tumour does not extend completely across the entire breadth of the forearm, being limited to the transverse extent of the radius; but the opposite is the case when the lesion implicates both bones. I have placed on the table a series of casts and preparations illustrative of disjunction of the lower radial epiphysis. Two of the casts represent the hands and forearm of a lad under twenty years of age, who, having fallen from a height, sustained a severe injury of the head, which proved fatal in a few days. In each forearm, the radius was broken close to the wrist-joint; and upon each side the external characters of the injury were as nearly as possible alike. The diagnosis of separation of the radial epiphysis was easily made, and was confirmed by the post mortem examination. There was no fracture of the ulna upon either side.

Time will not permit of my entering more at length into this important subject, and, at all events, I have had very little experience indeed of the occurrence of epiphysary disjunction in any of the other large joints except as the result of disease. I cannot, however, omit to mention an instructive paper, published by my friend Mr Canton in the Dublin Medical Journal for 1861, in which he treats of separation of the lower epiphysis of the femur, and details two cases in which, to save life, he had recourse to the operation of excision of the knee-joint.

Should time and other circumstances permit, I shall probably venture to lay before the profession, in the form of a separate treatise, accompanied by the necessary illustrations, the results of my experience as regards the entire subject of epiphysary disjunctions. The hope of being able to accomplish this somewhat reconciles me to the very imperfect outline of these injuries which the members of the Association have honoured me by listening to.

I cannot terminate this discourse without congratulating the members of the Association upon the success which has hitherto distinguished their honourable career. It is not in a scientific point of view merely that the British Medical Association has been a benefit to our profession. Largely has it aided in removing petty jealousies, in softening down asperities, in smoothing ruffled feathers. It is calculated to make the members of the profession more cautious in the discharge of their relative duties towards society and one another, and to impress upon them the broadness of the distinction that exists between the path to honourable pre-eminence and the stealing into notoriety by means which are unworthy, and which lessen the confidence of the public in all that concerns us.

To accomplish these important objects is one of the wise purposes of the Association. Its members seem to be well aware (to use the words of the eloquent author[1] of the "History of the Medical Profession in Ancient Times"), that, to the initiated, Medicine is something more than a profession; it is a world within itself. It has its history, its politics, its philosophy, its literature, of which the world at large knows nothing. It has its subsidiary arts and occupations, its organisations and institutions. It has its polemics and dissensions, not always amenable to logic or the learning of the schools. In ethics, in traditions, in superstitions, it is older than the Church. In use before the civil law, it recognises no arbitrary enactments. Nature is its only court of equity; and who amongst us, in this great assembly, can forget its everlasting charities—its unnumbered acts of silent and tender mercy, countless as the golden grains of sand? Who can forget its moving scenes of joy and sadness, its many sunny aspects,—its benignant, ennobling, and liberalizing influences, which few beyond our own circle can properly appreciate, and none so well understand as ourselves? No wonder, then, that the members of our profession, surrounded and drawn together by such hallowed ties, should be disposed to band together as a brotherhood. Such has always been their course. The Druids of ancient Gaul and Britain, the Asclepiadæ of Greece, the priests of Ancient Rome, the Lamas of Central Asia, the Vaidhyas of India, the fraternities of the Middle Ages, and, up to the present hour, the countless societies and colleges of our own and other lands devoted to the healing art, are in proof of this; so that wherever social freedom has existed, wherever crushing tyranny would permit, internal organisation and development has been the rule of our profession. And well is it that it is so. We are thereby better enabled to understand our own position, to know how far we have advanced, to whom we owe our progress, the labour that is still before us, and the places we ourselves are likely to occupy in the estimation of those who are to follows us.

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[1] Dr Watson, New York.

It only remains, sir, for me to thank my audience for the patience with which they have heard me, and for the interest they have appeared to take in the subject-matter of my discourse. I thank them not merely as an act of formal politeness, but sincerely and from my heart; those familiar with me know that I am not in the habit of speaking one thing and thinking another. "Εχθρος γαρ μοι κεινος." The memory of my classic friends in this classic hall will supply the remainder of the quotation.

Members of the British Medical Association, I bid you farewell. I take my leave for the present of that noble institution whose founder was as it were but yesterday taken away from amongst you, and whose place knoweth him no more at all for ever,—an institution, however, the abiding success of which he lived to witness. He placed the texture upon the loom, and he lived to see the well-woven fabric develope into a bright garment,—a radiant robe which soon enveloped in its ample folds the medical profession throughout the length and breadth of mighty England; and my hope and trust is, that our children's children—that generation yet to come will behold it with its colours unfaded and its brilliancy untarnished.

GRADUATION IN MEDICINE AT THE UNIVERSITY OF EDINBURGH.

On the 1st of August, the annual ceremony of Graduation in Medicine took place in the Assembly Hall, under the presidency of Sir David Brewster. The following is the list of Graduates with the titles of their theses:—

Those whose names are printed in CAPITALS *passed the Examinations with Honours.*

*** *Those who have obtained Prizes for their Dissertations.*

** *Those deemed worthy of competing for the Dissertation Prizes.*

* *Those commended for their Dissertations.*

Candidates who received the Degree of Doctor of Medicine under the New Statutes.

Clark, John Barclay, Scotland, M.B. and C.M., 1865, when he gave in a thesis on the Reproduction of Limbs of the Crustacea.

Fothergill, Thomas Prince, England, M.B., 1865, when he gave in a thesis on Abscess of the Liver.

Kirk, Robert, Scotland, M.B. and C.M., with honours, 1865, when he gave in a thesis on the Pathology and Treatment of Ovarian Dropsy.

Mitchell, Samuel, England, M.B. and C.M., 1865, when he gave in a thesis on the Early Stages of Inflammation.

5 Moore, John Murray, England, M.B. and C.M., with honours, 1865, when he gave in a thesis on Diseases of the Pharynx, Larynx, and Trachea.

Candidates who received the Degree of Doctor of Medicine under the Old Statutes.

*Anstey, Arthur Newland, Australia. On Dislocation of the Hip and Shoulder.

Bell, John Hougham, Australia. On Conditions of the Air Passages requiring Surgical Operation.

Black, Daniel Robert, Scotland. On Fœticide and the Doctrine of Quickening.

*Cour, George Francis de la, England. On Type of Disease.

5 Cradock, Luke, England. On the Blood and its Relations to the Liver and Kidneys.
Dale, Frederick, England. On some Varieties of Surgical Injury.
Dyer, Alexander Kidd, Scotland. On the Actions and Uses of Opium.
Hamilton, Daniel Edward, England. On Puerperal Convulsions and the Importance of recognising Albuminuria previous to the Commencement of Labour.
Hay, George William Robertson, Scotland. On the Hypodermic Method of Treating Disease.
10 Hume, Geo. Halliburton, Scotland. On the Trichina spiralis and Trichinosis.
Macdonald, John, India. On Pneumonia.
*M'Nicol, John Clark, Scotland. On the Therapeutic Value of certain Drugs.
**Maule, James, Scotland. On the Absorbing Power of the Human Skin.
Mitchell, James, Scotland. On Tetanus.
15 *ROBBS, CHARLES HENRY DENNY, England. On Uterine Hemorrhage during Pregnancy.
Strange, Arthur, England. On Diet, including the Diet of the Insane.
*Taylor, Wm., Scotland. Contributions, Medical, Surgical, and Obstetrical.
Todd, Joseph, Ireland. On Scarlet Fever.
***19 Watson, Morrison, Scotland. On the Muscular Anatomy of the Posterior Limb in Aves.

On November 1866, Franklin Gould, B.A. (London), Tasmania, who was prevented from being present at the Graduation on 1st August 1866, received the degree of M.D. under the Old Statutes, and a Gold Medal for his Thesis "On the Thermometer in Disease."

Candidates who received the Degrees of Bachelor of Medicine and Master in Surgery.

Affleck, James, Scotland.
Allan, Charles James, M.A. (Aberdeen), Scotland.
Baddeley, John, India.
Baird, James Thomson Wilson, Scotland.
5 Barham, Alkman Henryson, England.
Barrie, Andrew David, India.
Bôsenberg, Andreas Georg Hendrik, Cape of Good Hope.
Bruce, John, Ireland.
Buncle, Alexander, Scotland.
10 Byass, Edgar Spry, England.
Cameron, James Angus, Scotland.
Campbell, Charles Moss, India.
Caton, Richard, England.
**Churchill, Frederick, England. Thesis, "On Incised Wounds.
15 Colladon, Henri Louis, M.A., Geneva.
Connel, John, M.A. (St Andrews), Scotland.
CUNNINGHAM, DAVID DOUGLAS, Scotland.
Dolman, George Tuite Cox, England.
Fairweather, William Augustus, B.A. New Brunswick.
20 Finlay, William Alexander, Scotland.
Gairdner, James, Scotland.
Gordon, James, B.A., Scotland.
Griffiths, David, Wales.
Haddon, John, M.A., Scotland.
25 Hay, Harry Douglas, Scotland.
Hewston, Alexander, B.A. New Brunswick.
HOLDEN, CHARLES, B.A. New Brunswick.
Houison, James, B.A., Australia.
HUNTER, GEORGE, Scotland.
30 Kirkwood, John, Scotland.
Laing, James Anderson, Scotland.
Lightfoot, Robert, England.

Low, Robert Bruce, Scotland.
Lucas, Robert, Scotland.
35 Lupton, Alfred William, England.
Macbean, Robert Baillie, Scotland.
MacDonald, Alexander Dall, Scotland.
MacEwan, David, Scotland.
Mackay, William Paton, M.A., Scotland.
40 MacRae, John, Scotland.
Mitchell, Harrison, England.
Moinet, Francis Walter, Scotland.
Murdoch, John, Ireland.
Muir, John Stewart, Scotland.
45 Munro, Robert, M.A., Scotland.
***Nicholson, Henry Alleyne, D.Sc. Edin., England. Thesis, "On the Geology of Cumberland and Westmoreland."
Paton, John Wilson, Scotland.
Rice, Michael Welldon, England.
Ritchie Christopher Currie, Scotland.
50 Stevens, Richard Howell, England.
Suttie, David, Scotland.
Sydney, Henry, England.
Tatham, Edmund, England.
Turner, Robert Shand, M.A., Scotland.
55 Watlington, Yldefonzo Victor, Puerto Rico.
Weddell, James Call, Berwick-upon-Tweed.
Williams, Joseph Llewelyn, North Wales.
Wilson, Alexander Christy, Scotland.
Wright, Henry Richard, England.
Wright, Strethill Henry, Scotland.
61 Young, Peter Alexander, Australia.

Candidates who received the Degree of Bachelor of Medicine.

Buist, John Brown, Scotland.
Crombie, Alexander, Scotland.
Dunsmure, James, Scotland.
Hett, Geoffrey, England.
Lawrence, Alexander, Scotland.
Lawrie, Edward, England.
7 Mules, Philip Henry, England.

SUCCESSFUL CANDIDATES IN BRITISH MEDICAL SERVICE.

The Director-General encloses a List of the Candidates of Her Majesty's British Service who were successful at the Competitive Examination in February last, and who have passed through a course at the Army Medical School, showing the combined results of the Examination.

Names.	*Studied at*	*Marks.*	*Names.*	*Studied at*	*Marks.*
Bredon, R. E.	Dublin,	5570	Parkinson, R. C.	London,	3397
O'Reilly, T.	Dublin,	4753	Moore, J. H.	Belfast,	3293
Fairland, E.	London,	4620	Irving, G. C.	Dublin,	3290
Murphy, R. P.	Dublin,	4370	Tolmie, T. C.	Glasgow,	3268
Townsend, E.	Cork,	4238	Wade, N.	Dublin,	3268
O'Reilly, J.	Dublin,	4060	Roche, A. W.	Dublin,	3240
Wheeler, W. J.	Dublin,	3816	Purcell, G. C.	Dublin,	3163
O'Flynn, D. J.	Cork,	3715	Croker, J. P.	Dublin,	3026
Olden, D. L.	Dublin,	3683	Morgan, J. W.	Dublin,	2905
Williams, J.	London,	3608	M'Alery, R. P.	Belfast,	2662
Cogan, T. S.	Dublin,	3525	Holmes, T. J. R.	Dublin,	2574
Supple, J. F.	Dublin,	3478	Kilroy, M. A.	Dublin,	2435

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The President, Vice-President, Council, and Fellows met on Thursday, August 15, at three o'clock, for the purpose of conferring on Mr Syme and Mr Bowman, F.R.S., the Honorary Fellowship of the College.

The President having entered the board-room, and taken his seat, Mr Syme and Mr Bowman were presented to him.

The *President* (Dr Robert Adams) then said:—

Mr Professor Syme and Mr Bowman,—You have been made aware of the circumstances that on the 1st of August you both have been unanimously elected Honorary Fellows of the College by a resolution of Council. We now avail ourselves of your presence in our city to put into your hands our diploma. We feel that in this place it would be quite unnecessary to state our reasons for so acting, or to add what you have done for the advancement of the science and art of Surgery. Both of your names are interwoven with the progress of Surgery, and the shelves of the library of our College have long contained your several works. By handing to you these diplomas, and adding your names to the scanty, or rather *recherché* list of Honorary Fellows, we give the best proof of the estimation in which you are both held in this College. By so acting, we express a wish to do you an honour, and cannot doubt but, at the same time, the College itself will be really honoured by having added to its list of Honorary Fellows the names of two such men as those of Professor Syme and Mr Bowman. I cannot conclude without congratulating you both on the eminent position you have attained, the one in Edinburgh, that revered seat of learning and scientific medical education, and the other in London, the capital of the world; and may I add that I feel happy that from the circumstance of my being *now* President of this College, I have thus been afforded the opportunity of being the medium of communicating to two valued friends the greatest distinction this College has to bestow.

The diploma of Fellowship, enclosed in handsome morocco case, was handed to Mr Syme and Mr Bowman admid loud applause.

Mr Syme then said—Mr President and Gentlemen,—Many years ago, when little more than a student, I happened to be present when the foundation stone of this magnificent building was laid by the Marquis of Wellesley, and then very little anticipated that within its walls I should now receive such a distinguished honour as that which you have been pleased to confer upon me. I fully appreciate its value, and beg you will accept the assurance of my deepest and sincerest gratitude.

Mr Bowman said—How can I express my grateful feelings on receiving so unexpected an honour from this great College, representing Irish Surgery, and in the presence of so many distinguished men? I am reminded by the place in which I stand, and by your honoured presence, sir, in that chair, of days long since passed, when you, and others of your colleagues in the great clinical school of Dublin, inspired a young student with sentiments of admiration which the lapse of time has only served to strengthen; and when you admitted me to your friendship, what I then saw of the system of teaching pursued in the wards of the great hospitals of your city, and the careful study I made of the stores accumulated in your museums (and I referred to my notes of them but yesterday), convince me that the Dublin School of Medicine and Surgery—eminently honest, scientific, and practical—was second to none in Europe, if, indeed, it did not in some respects surpass most. I found Collis, Cusack, yourself, sir, Carmichael, Porter, with Graves and Stokes in Medicine, laboriously and richly turning to the best uses of science and of instruction the great opportunities you possessed—exhibiting yourselves to your students as students yourselves in the great field of nature, and imbuing them thus with your noble spirit as well as with your doctrines. The eminent merit of Dublin as a clinical school of Medicine and Surgery has been perhaps less appreciated than it deserves by the world at large, owing to its geographical position, somewhat aloof and insulated from the ordinary tracts of travel. The more it is known by personal inspection, the more highly, I am certain, will it be esteemed; and I am conscious that no reward which so humble an individual as myself can possibly receive for professional labours, could be more flattering than the spontaneous and honourable testimony of the good opinion of such a corporation as yours. I may be permitted to say that its value is enhanced by the circumstances that, in receiving it, I stand by the side of one of the most distinguished men that any age of great surgeons has produced.

AMERICAN VIEWS OF PROFESSOR SYME'S AMPUTATION.

THE following extracts from an able little brochure on "Mechanical Surgery," by Dr E. D. Hudson of New York, are full of interest, and illustrate the great value of Professor Syme's amputation at the ankle-joint, and the high opinion entertained of it by the principal surgeons in America:—

"No amputation of the inferior extremity can ever compare, in its value to the subject, with that of the ankle-joint, originated by Mr Syme. Twelve years of experience with that variety of operation have afforded me assurance that it is 'a fact complete,' not capable of being improved in its general character. It is scientific, practically of the utmost use, and subservient to the best interests and happiness of the patient. . . . No other operation has resulted so beneficially and satisfactorily. The subjects of such an amputation scarcely realize their loss, with legitimate appliance. They appear every way whole. The sensations of the stumps are normal; the articular surface and thickened tissues are accustomed to the hardest service, and to bear the heaviest burdens, which, with apparatus, enables the patient to engage in his accustomed walks and avocations with unabated naturalness and endurance. One gentleman, for whom I applied a foot, has walked thirty-five miles in a day, on a hunting excursion, while his companions did not suspect that he was otherwise than whole. . . . It is an operation that has for its support the soundest principles of surgical economy. . . . I have been led to a very great interest and persistent advocacy of Mr Syme's method, by a regard for the humane principles of rational conservatism, and by the numerous cases of ankle-joint amputation which have demonstrated to me the superior utility of that operation to any amputation of the leg, or any modification of the general one of Mr Syme. Of fifty recent cases which have come into my hands for final treatment by mechanical means, not one has failed of a highly gratifying success. . . . I never have a patient of a Syme amputation make use of a cane, nor walk in any other than the most natural gait."

The following is the expression of a committee of the medical members of the Sanitary Commission on the subject of amputations of the foot and ankle, viz.:—"Of the amputations through the tarsus, or at the ankle-joint, preference should be given to Syme's operation, as affording a minimum mortality, with a stump best adapted to an artificial limb. An artificial limb may be applied to a Syme's stump, which both relieves deformity and renders the patient's gait free from the slightest halt."

(Signed) Stephen Smith, M.D., *Chairman;* Valentine Mott, M.D.; Gordon Buck, M.D.; John Watson, M.D.; Alfred C. Post, M.D.; Willard Parker, M.D.; Ernest Krackowizer, M.D.; W. H. Van Buren, M.D.

GOODSIR FELLOWSHIP—AUGUST SUBSCRIPTION LIST.

Dr T. A. G. Balfour, Edinburgh,	£3	3	0
Adam Black, Esq.,	10	10	0
A. Vans Dunlop, Esq.,	2	2	0
Dr Main, Bromborough, Chester,	1	1	0
Principal Sir David Brewster,	2	2	0
Dr William Martine, Haddington,	1	1	0
Dr Macarthur, Anstruther,	2	2	0
A. Campbell Swinton, Esq. of Kimmerghame,	5	5	0
Dr George Dods, Hong-Kong,	3	0	0
Professor Dickson, Dublin,	£3	3	0
Dr Archibald Dickson, Roy. Circus,	2	2	0
Miss Duncan, of Balchrystie,	1	1	0
Rev. Dr Urquhart, Newburn Manse,	1	1	0
Dr John Macnab, Loch Inver,	2	2	0
B. J. Walker Morison, Esq. of Falfield,	5	0	0
Dr James Young, Castle Street,	2	2	0
Dr Henry Roome, Parkhurst,	1	1	0
Dr John Shepherd, Eccles,	1	1	0

Part First.

ORIGINAL COMMUNICATIONS.

Article I.—*On Enteric Fever in Dundee and Neighbourhood.* By T. J. Maclagan, M.D., late Medical Superintendent Dundee Royal Infirmary.

Enteric Fever is endemic in Dundee and neighbourhood. At the commencement of the winter of 1864, a sudden and remarkable increase in the number of admissions into the Infirmary of patients labouring under this disease took place, and during the winter months of 1864–65, this form of fever was so prevalent that two wards had to be specially set apart for the reception of the cases.

The object of this paper is, first, to give a short account of the cases, and, secondly, to give the result of investigations made at the time with the object of finding out the cause of its more than usual prevalence.

From July 1864 to July 1866, there were treated in the wards of the Dundee Infirmary 127 cases of undoubted enteric fever, of which 46 were males and 81 females; the preponderance of females is due to the employment of so many young women in the mills,—they are absolutely more numerous than young men, and hence their greater numbers in these statistics.

The following table shows the sex, ages, and mortality of the cases:—

Table I.

	Total.	Recovered.		Died.		Percentage of Deaths in Males.	Percentage of Deaths in Females.	General Percentage.
		M.	F.	M.	F.			
Under 5, . .	2	1	1	...	...	...	...	...
5 to 10, . .	2	...	2	...	...	...	...	...
10 ,, 15, . .	11	5	4	1	1	16·6	20·0	18·18
15 ,, 20, . .	34	6	24	1	3	14·2	11·1	11·7
20 ,, 25, . .	34	12	20	...	2	...	10·0	5·8
25 ,, 30, . .	23	11	11	1	...	8·3	...	4·3
30 ,, 35, . .	11	5	5	...	1	...	16·6	9·09
35 ,, 40, . .	1	1	...	...	...	...	...	...
40 ,, 45, . .	3	...	3	...	...	...	...	...
45 ,, 50, . .	3	1	2	...	...	...	...	...
50 ,, 55, . .	...	...	...	...	...	...	...	...
55 ,, 60, . .	3	...	2	1	...	100·0	...	33·3
Total, .	127	42	74	4	7	8·6	8·6	8·6

The mass of the cases, 71·6 per cent., are of ages ranging from 15 to 30,—only 7·8 per cent. are above 40. The average age was 21·5 years. The large mortality at the early periods of life contrasts very strongly with the low death-rate in typhus at the same periods. The 3 cases noted in the last quinquenniad were well marked,—two of them, husband and wife, came from one house; the man died, and, on making a sectio, there was found extensive ulceration of Peyer's patches.

As seen from the following statement, a much larger number of cases occurred during the autumn and winter months than during those of spring and summer:—In January were admitted 16; February 10; March 6; April 4; May 8; June 9; July 9; August 12; September 9; October 16; November 16; December 12.—Total, 127. This point will be more fully referred to in an after part of the paper.

The eruption was present in 92, or in 72·4 per cent., of the cases. Of the 35 cases in which no eruption appeared, 4 proved fatal, and showed all the usual post mortem appearances of enteric fever; in those which recovered, the symptoms were so well marked as to leave no doubt of the nature of the case.

In 25 cases there was no diarrhœa, in 46 it was slight, in 49 troublesome, and in 7 severe; in 3 of these 7 cases there was hæmorrhage from the bowel. In no case did perforation take place.

In 11 cases a relapse occurred, and in 1 of these two relapses; in 5 cases the relapse was accompanied by a fresh eruption; in the case which twice relapsed, the eruption reappeared during the first, but not during the second recurrence of the symptoms; in 1 case the eruption was noted only during the relapse. Of the 11 cases, 10 occurred during the autumn and winter months of 1864-65, since then only 1 case has relapsed. So common an event was it at the time referred to, that the first few weeks of convalescence were watched with some anxiety.[1] The mean period of intermission was 10 days, the shortest being 6, and the longest 15. Of those cases in which the day of commencement of illness was ascertained, 2 showed the first symptoms of relapse on the 28th day, 1 on the 38th, 1 on the 44th, 1 on the 46th, 1 on the 55th, and 1 on the 59th. Of the 11 cases, 8 were females, aged respectively 17, 18, 19, 20, 21, 26, 28, and 32, and 3 males, aged 12, 27, and 30. In no case did the relapse prove fatal.

[1] One case not included in the 11 was peculiar. The patient, a female, had been treated in the Aberdeen Infirmary for what, Dr Harvey informs me, was well-marked enteric fever, with eruption and general symptoms proper to that disease. She was discharged on March 28th; a week afterwards she came to Dundee; two days afterwards, or on the 10th from the date of discharge from the Aberdeen Infirmary, rigors and general febrile symptoms recurred. She was then admitted into the Dundee Infirmary, where she went through an ordeal similar to that which she had passed in Aberdeen, the eruption and other symptoms being well marked.

The following table shows the number of cases complicated, with the complicating malady; in it are included only those cases in which the secondary affection was sufficiently severe to influence unfavourably the prognosis or course of the case:—

	Total.	Recov.	Died.
Complicated with Albuminuria, . .	1	...	1
„ „ Bed-sores, . .	3	1	2
„ „ Bronchitis, . .	7	6	1
„ „ Broncho-pneumonia, .	1	...	1
„ „ Epistaxis, . .	5	5	...
„ „ Gangrene, . .	1	...	1
„ „ Hæmorrhage, . .	3	3	...
„ „ Parotid swelling, .	2	1	1
„ „ Phlegmasia dolens, .	1	1	...
„ „ Pleurisy, . . .	4	3	1
„ „ Tetanus, . . .	1	...	1
Total, .	29	20	9

From this it seems that 22·8 per cent. of the whole were complicated; the mortality amongst the complicated cases was 31·03, and amongst the uncomplicated 2·04, per cent.; the mean death-rate being, as seen in Table I., 8·6 per cent.

In 3 cases the typhus and enteric fevers were believed to co-exist.

The patient in whom tetanus formed the complicating malady died of that affection at the end of the 7th week, but before there was any appearance of convalescence. The cause of the tetanus was probably a large bed-sore which existed over the sacrum.

A notable fact in several of the cases was the gay, mirthful, and amusing character of the delirium. A woman, aged 38, who went through a well-marked but not very severe attack, sung almost incessantly one verse of the same song for some considerable time; when spoken to, she left off and answered rationally enough any questions that were put to her, but when left she at once resumed her chant. Another female patient, aged 18, whose case was equally well marked, and whose delirium consisted chiefly in carrying on a lively and chaffy conversation with some imaginary individual, gave perfectly rational answers, but had a peculiar habit of profusely interlarding her sentences with the expression "says I;" even in giving the shortest and most simple answer she made use of it; for instance, on asking the following questions (as I frequently did, for no other purpose than to see how she would answer them), the answer given was always the same:—"Are you any better to-day?" "Yes, sir, says I." "You don't think yourself any worse?" "No, sir, says I." In giving a longer answer the "says I" came in on every possible opportunity, and with a frequency which was as ingenious as it was amusing. After the establishment of convalescence the expression was never once used, and I learnt from inquiry, both from herself and her friends, that before her illness she had never been in the habit of using it.

In many of the patients the delirium was of this light, airy character; in some it was of the low muttering type; but in no case did it partake of that fierce and obstinate character so often seen in typhus. The tractability of the enteric cases, even in the midst of their delirium, contrasted remarkably with the difficulty experienced in the management of many of the typhus cases.

Generally, the cases may be said to have been of a mild character, with neither the abdominal nor head symptoms very prominent. The most noteworthy points were the occasional, and at one period frequent, occurrence of relapses, the often protracted duration of the febrile symptoms, and in many a persistently rapid pulse during convalescence. In not a few cases the cardiac action was more frequent during convalescence than during the time of existence of the fever, the condition of the patient in every other respect indicating a satisfactory progress towards health.

In three years three cases originated in the house. The first was my own, which occurred before I had been three months in office, and when, in consequence of the repairing of some of the main pipes, the water supply was rather scanty. The second was that of a convalescent from typhus, of whose attack no satisfactory explanation could be found. Four or five cases of enteric fever were in a neighbouring ward, but no communication took place between the two otherwise than through the persons of the medical attendants. The third was in a night nurse of the male medical ward, who had two cases of enteric fever under her charge at the time; she had only been in Dundee for a couple of months previous to the date of commencement of her illness. These cases all occurred at wide intervals; in the first and third there existed a possibility of the disease being communicated; in the second that possibility seemed almost excluded. In the summer of 1863 the medical superintendent died of enteric fever; the mode of origin of this case, so far as I could learn, was not ascertained.

Four convalescents from enteric fever contracted typhus in the hospital; three of them had, either during the duration of the fever or during convalescence, come in contact with typhus patients; the fourth case sprung up in a general ward in a patient who had not been exposed to direct contagion. Enteric cases were almost invariably treated in the general medical wards, and were never wittingly put amongst typhus cases. No patient in the general wards ever contracted the disease.

The observations on which the second part of the paper is founded were begun in the autumn of 1864, and continued, with more or less regularity, for nearly two years. During that time but few cases of enteric fever were admitted into the Infirmary whose place of residence before admission was not visited, and its sanitary condition noted. The time at my disposal prevented me in many cases from making that minute examination and house-to-house visitation which I should have wished. I have, however, accumulated a body of facts sufficiently numerous to admit of legitimate induction; their number is too great to admit of their being individually particularized; I shall, therefore, in giving instances, give only enough to illustrate and justify the inferences drawn from the whole.

I may mention that I commenced these investigations with a leaning towards the pythogenic theory of the origin of enteric fever, but thoroughly sceptical as regards its communicability from one person to another. As I advanced with my investigations, facts in favour of both modes of origin so pressed themselves on my attention, that I was at last thoroughly convinced both of the correctness of the pythogenic theory and of the fact that enteric fever is occasionally communicated.

For the sake of convenience and clearness, I shall divide the cases on which the observations were made into two classes, (*a*) those in which the *materies morbi* was introduced into the system through the water, and (*b*) those in which it was introduced directly through the atmosphere.

(*a*) It has already been mentioned that, in the autumn of 1864, there took place a sudden and notable increase in the number of admissions into the Infirmary of patients suffering from enteric fever. It was then that my investigations commenced, and I had not proceeded far with them before I was struck with the fact that the vast majority of the cases came from a village called Lochee, in the immediate neighbourhood of the town; as time advanced, and admissions increased, this fact became more and more evident, plainly indicating that in Lochee there must be some local cause at work. A very few inquiries led to the discovery of two important facts:—first, that the drainage of the town extended only to the commencement of, but did not enter, the village, whose only drainage was on the surface; and, second, that the Water Company which supplied the town had no pipes in Lochee—the inhabitants drawing their water from wells, either by pumps or by buckets. Here, then, were two conditions affecting the whole village, and subjecting its inhabitants to the influence of external sanitary conditions quite different from those surrounding the inhabitants of the town.

The village is a large one, containing about two or three thousand inhabitants; the southern and eastern portion has a tolerable elevation; the northern and western lies low. It was in the latter part that the fever was so prevalent; here the houses are generally built in blocks or "lands," each of which is, as a rule, named after the party who built it, generally a millowner, whose operatives inhabit the houses. When a land is put up, a well is sunk in the neighbourhood; from this the inhabitants draw their water. Somewhere in the vicinity, generally at the back of the land, in as convenient a position as possible for all parties, is erected a privy and midden, into which latter are poured the slops and refuse from all the houses in the block. Occasionally the lands are built so as to form two or three sides of a square, whilst others consist of a single block. The result of this system of putting up the houses is an irregularity in the general arrangement, and a want of properly paved streets and courts, which tend much to encourage and foster sanitary defects. The above general description is applicable to all the lands. With the object of illustrating their exact state, I shall give a more minute description of one of them. For this purpose I shall select that which, to all external appearance, was the cleanest and most free from sanitary defects.

Luis' Land is not in the lowest portion of the village, but is very close to it; it consists of two blocks of houses two storeys high, and forming nearly three sides of a square; one block, running east and west, forms the south side, the other forms the west and incomplete north side; at the open east side is a byre,[1] and at the incomplete part of the north side a school; in the centre of the square is a closet and midden built of stone, and forming a receptacle for the slops and refuse of all the inhabitants; just at the back of the south row of houses, and in dangerous proximity to the midden, is a well, from which the inhabitants get their water by means of a pump. The whole court, forming the hollow of the square, was in a rude, untidy state; liquid filth running in streams from the midden over the unpaved court, which in wet weather is said to be in a dreadful mess. The supply of water is generally, and especially in dry weather, scanty and insufficient, and at no time is the water itself, according to the inhabitants, of good quality. Many of them are in the habit of getting water from other wells, from choice as well as from necessity. The midden seems to be frequently emptied. A slight variety of opinion existed regarding the exact time which elapsed between each emptying; probably three times a week is correct; at all events, no complaints were made, every one agreeing that it was done regularly and often enough. The houses themselves were good, and most of them pretty clean and tidy; there were, however, several exceptions to this. The inhabitants seemed comfortable and well nourished; they had abundance of work and good wages; they were not overcrowded, and showed neither in their persons nor in their dwellings anything likely to produce fever.

This block of houses may be taken as a sample of the whole: the sanitary defects generally observed consisted in the existence of closets and middens in the neighbourhood of the houses and in proximity to the wells, and in the absence of drains to carry off the filth, which soaked into the ground and contaminated the water, as I shall now proceed to show.

After the facts noted above had forced themselves on my attention, and led to the belief that the water was likely to be rendered unwholesome, I made a qualitative analysis of the water derived from the wells in the neighbourhoods in which the fever most prevailed, and found in every case clear and abundant evidence of the existence of organic matter in a state of decomposition. The tests used were those given in Dr Parkes' Practical Hygiene. As an example, I shall give in an abridged form my notes of the analysis of the water taken from the well at Luis' Land, where we have seen that so much enteric fever existed. I choose this one, in the first place, because this land has already been instanced and described; and, in the second place, because it is not included in an analysis of the water of most of the other wells made two years afterwards by Dr Stevenson Macadam of Edinburgh, on the occasion of an outbreak of cholera, and to which more detailed reference will be made in an after part of this paper. Suffice it to say, that at the time of my analysis they all resembled very much the one which is here given as an example:—

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[1] This byre has been removed since the time at which this note was made.

Water from the well at back of Luis' Land was odourless, colourless, tasteless, and threw down on standing a scanty deposit, seen under the microscope to consist of amorphous and angular particles. The chloride of gold test gave evidence of the presence of a considerable amount of organic matter. On applying the tests for nitric and nitrous acids the reactions characteristic of the presence of these acids were instantly produced: in testing for the latter, the blue coloration was at once caused by the iodide of potassium starch paste without any previous concentration of the water. There was also distinct evidence of the presence of lime, chlorine, and sulphuric acid. Here, then, we have direct and undeniable proof of the contamination by organic impurities of the water supply of the localities in which the fever prevailed. Regarding the mode in which this contamination was produced there can be no doubt: the want of a proper system of drainage led to the retention in the neighbourhood of filth whose decomposing particles were carried along with the water into the wells. It is quite possible that some of the cases may have been due to the emanation of noxious vapours from the surface of the ground, or to direct communication of the disease from a previously affected individual; it is also possible, nay, highly probable, that in many of the cases the disease was due to indirect communication consequent on the passage into the water of matters derived from the stools of those previously affected—an agency which doubtless had the effect of considerably prolonging the duration of the disease in the locality. How far each of these conditions operated, it is obviously impossible to determine, as the cases were all exposed to the influence of the one morbific agent common to all the affected localities.

It has already been remarked that the fever was almost entirely confined to the low-lying part of the village, and that the eastern portion was nearly, if not altogether, free from it. Under these circumstances it may not be uninteresting to contrast the hygienic conditions of the two localities: of that in which the fever prevailed I have endeavoured to convey some idea; the other eastern part has the advantage of being situated on the slope of the hill, and of being more regularly built; there are regularly formed "gutters" or surface drains for carrying off the slops, and in consequence of the slope, these act pretty effectually. Altogether, the general aspect of the place is much more cleanly and tidy than that of its fever-haunted neighbour. Besides all this, the water supply is different, its chief source being a well, called the East Well, away from all likelihood of sewage contamination, and which enjoyed the reputation of yielding a good and abundant supply. The water got from this source was submitted to the same tests as the others, and gave no evidence of the existence of organic impurities.

From the above facts it is justifiable to draw the conclusion that the outbreak of the malady was due to the contamination of the water by sewage matter; that its spread and continued prevalence were due to the same cause, and to the further pollution of the water by matter derived from enteric stools; and that a few cases may have been caused by inhalation of the poison derived either from the stools of an enteric patient, or from other decomposing fæcal matter. But the question will naturally be asked, "Why should the disease have shown such a marked increase in the winter months of 1864—why should the contamination of the water by sewage matter have produced an outbreak of enteric fever at that particular time in preference to any other?" The answer to this question goes far to justify the conclusion which has been drawn. Granting, and taking as a starting point the fact that the fever was due to the contamination of the water in the manner explained (by infiltration through the soil), it would be natural to suppose that the greater the quantity of organic impurities which entered the water, the more prevalent would be the fever: it would be equally natural to suppose that the drier the weather and the scantier the water supply, the less would be the amount of sewage matter carried into the wells; and the longer the continuance of this drought and the greater the succeeding rainfall, the larger would be the quantity of decomposing matter carried into them when once a good supply returned. In other words, a dry season would lead to the retention in the soil of sewage impurities which a succeeding wet season would cause to be conveyed into the wells; and directly as the extent to which these conditions of the seasons prevailed, would be the likelihood of an outbreak of enteric fever in the latter of the two. Of course, the seasons in which these states of the weather are most likely to occur are, on the one hand, summer and early autumn, and on the other, the latter part of autumn and winter.

That the agencies thus hypothetically indicated were those which gave rise to the prevalence of the fever at Lochee towards the end of 1864, is proved almost to demonstration by a reference to the following table, in which is given the rainfall for each month of that year, together with the number of days and hours on which rain fell; the last column shows the average fall for the eight years immediately preceding 1864. The observations were made at

Barry, a village about five miles from Dundee, by Mr Proctor, Cor. Mem. Met. Soc. Scot., than whom, I believe, a more accurate observer does not exist; they are, therefore, thoroughly reliable.

Months.	Days.	Hours.	Inches.	Mean Fall for 8 Years.
January, . .	19	55	2·28	2·33
February, .	23	105	3·86	1·65
March, . .	23	86	3·02	2·
April, . . .	14	71	1·21	1·76
May, . . .	16	50¾	2·	1·94
June, . . .	24	56½	1·88	3·03
July, . . .	16	58	2·60	2·5
August, . .	17	29	·79	2·89
September, .	24	65½	3·29	3·27
October, . .	19	137½	8·95	2·58
November, .	20	90	3·75	2·65
December, .	23	117	3·20	2·48
Total, .	238	921¼	36·83	230·87

From this it will be seen that the rainfall for the whole year was 36·83 inches, being an average for each month of 3·07. During November, December, January, February, and March, the fall is about the general average (3·2 inches); during April, May, June, July, and August, it is much below the average,—the mean fall for these months being 1·69 inch; in September it again comes up to the mean standard; and in October, the same month in which the fever began to increase so rapidly, there fell 8·95 inches of rain, being nearly three times the general average for the year, more than four times the average of the six preceding months, and more than double the fall of any other two months put together. Notwithstanding this, the number of days on which rain fell in October (19) is rather below the average for all the months of the year (19·83), whilst the number of hours (137½) is greatly above it (76·7), two facts which, taken together, indicate a rainfall more than usually continuous and copious, and one more likely to act efficiently in dissolving and carrying with it any impurities which might be in the soil. The facts of the case are as follows:—A locality having no drainage gets its water supply from wells, into which it is proved that sewage matter enters. During the months of April, May, June, July, and August, the rainfall is small, in the last month particularly so; under these circumstances it is probable that both in the soil and on its surface there is, by the end of summer, a considerable collection of organic matter undergoing decomposition, and waiting only for a copious fall of rain to carry it off. In September the drought is not so great, the quantity of rain which falls being about the average; still, it has fallen on a dry and parched soil, which probably soaks it rapidly up, allowing very little to permeate into the wells; it has the effect, however, of relieving the parched condition of the earth. In October (whilst the soil is in this apt state for its reception and ready permeation) there comes a copious and heavy rainfall, which is likely to carry into the wells a large quantity of the impurities which had been collecting during the summer months. That it did so act in the present case is proved by the circumstance, that in the same month in which this great and remarkable increase in the rainfall took place, there was observed a correspondingly sudden and notable increase in the prevalence of enteric fever in the locality, two circumstances which, when taken in conjunction with the facts already given, can scarcely be regarded otherwise than as cause and effect. The greater prevalence of enteric fever during the autumn and winter months has almost constantly been noted by observers; and especially has this been the case after unusually dry and hot summers. The explanation which has been given of its prevalence at Lochee in the early winter months of 1864, would probably apply equally well to many similar outbreaks.

(*b*) Those cases in which the *materies morbi* was introduced directly into the system through the atmosphere, were less numerous and more scattered than those in which the water was at fault. Many of the localities from which they came presented external sanitary conditions very similar to those already noted as belonging to the tenements in Lochee; their only points of distinction being that they were supplied with good wholesome water, and had an efficient system of drainage. The water was derived from the pipes of the Water Company, and was quite free from sewage impurities.

The first fact to be noted in these cases is, that very few of them came from the low-lying parts of the town where typhus was so prevalent; the elevated north-eastern portion, called Maxweltown, supplied the largest number; next in frequency came the cases from the courts and lanes at the upper end of the Scouringburn, towards the western extremity of the town. When first this fact declared itself, I was inclined to look on it as indicative of some defect in the construction of the drains, some error in the mode of trapping them permitting of the return of noxious effluvia; it being natural to suppose that, if this were the case, the gases would be more likely to ascend in force where the elevation was greatest. I could get no facts, however, to support this theory, and was therefore driven back on the details of my notes to look for some other explanation; at the same time, for the sake of contrast, many of the courts, closes, and alleys in which enteric fever had not occurred, were visited, and their general sanitary condition noted; the result was as follows:—

In the low-lying and more densely populated parts of the town there were comparatively few courts, and those which did exist were paved throughout. The usual mode of access to the houses was by stairs leading off from long narrow closes. In all, there was found either a lamentable deficiency, or total want, of water-closets—the refuse and filth from all the houses being, as a rule, carried by the inhabitants to the streets, whence it was carted away early in the morning by the authorities. In one or two courts there was found a large stone or iron box, which served as a receptacle for the accumulated filth of the neighbourhood, and which was generally emptied every morning, but in some cases only three or four times a week. The liquid state of much of the filth in these, rendered it impossible to clean them out thoroughly. This could only have been done by having a hole in the bottom, and washing them. This plan, however, was not adopted. Wherever these tanks existed, the inhabitants complained much of the bad smell which came from them, especially when they were being emptied. It has already been mentioned that, whilst these low-lying portions of the town (chiefly the closes running off the Overgate) supplied the majority of the cases of typhus which were treated in the hospital, it was exceedingly rare to get a case of enteric fever from that locality. One or two cases, however, did occur; and, for the sake of example, I shall give a description of the place whence one of them came, and which also supplied many typhus cases:—

Methodist Close runs off the north side of the Overgate, one of the most densely populated parts of the town. It is a dark narrow alley, completely roofed over, and terminating in a small paved court or *cul de sac*, whose only opening is the close which leads into it. At the farther end of the court is a winding stair, forming the means of access to the houses. Close to this stair, and in a corner of the court, is a large iron box, into which is emptied all the filth of the inhabitants, who frequently perceive bad smells coming from it, chiefly in the morning when it is being emptied—a matter of daily occurrence. At time of visit, the box was one-fourth full of a horrid mixture of ashes and ordure. The case of enteric fever occurred on the second floor of the winding stair already alluded to. The whole aspect of the place was dank and dingy. This may be taken as a sample of the closes which have a court attached to them. The majority have no such court, but consist simply of an alley, having stairs leading off. Wherever a court existed, there was certain to be an ash-heap or box (such as I have described), leading to the retention of filth in the locality. Not one case of enteric fever came from one of those closes having no court, and, therefore, no convenient spot for the deposition of filth. Let us contrast with this the state of those portions of the town in which enteric fever was much more common.

The north-eastern part of the town (Maxweltown) and the upper part of the Scouringburn have already been indicated as enjoying notoriety in this respect. As compared with the lower parts of the town, these (and especially Maxweltown, where the fever was most prevalent) seem to possess many advantages. They are of more recent construction, the houses are less densely packed together, the courts are more airy, the closes are less dingy, and their general aspect gives one to a much less extent the idea of a dense population. They have one characteristic, however, which is wanting in the densely populated typhus haunts: they abound in unpaved courts, possessing closets and middens such as have been already described as existing at Lochee. Here I find it difficult to make a selection from my notes, the cases are all so much alike. I shall give, as shortly as possible, a description of two blocks of houses, one from the eastern, the other from the western, portion of the town:—

From a court off Union Street, Maxweltown, four cases came to the Infirmary during the winter of 1864-65. In the same house from which one of them came, the landlady had had five children ill with what seems to have been enteric fever; but as no medical man saw them, and as one or two cases of typhus had occurred in the locality, there exists some doubt as to the real nature of their illness. The court was entered by a short close leading off the street. The houses were two storeys high, those on the upper storey being reached by outside stairs leading from the court, in the centre of which was the usual midden, with closet attached. This dust-bin was said to be emptied three or four times a week, the filth on these occasions being conveyed in barrows to the front street, and then put into a cart and carried off. A few months before the time of my visit, the midden had been roofed over, in consequence, I was given to understand, of the bad smells so frequently complained of by the inhabitants, some of whom informed me that the stench was at times so bad that they were compelled to stuff up the keyholes of the doors, in their endeavours to keep it out. On every occasion on which this place was visited, a disagreeable odour was felt in the neighbourhood of the midden, and a good deal of loose filth was found about the court. The inhabitants were of the better class of work people: as a rule, their houses were well and tidily kept.

Brown's Buildings, Scouringburn, is a densely populated block of houses, forming a hollow square, from which exit is had by a covered pend, and having in its centre a closet and filth receptacle of the usual style, which was said to be cleaned out only once or twice a week. The court was unpaved, and had a good deal of filth lying about. On the north side, the rooms on the ground floor were below the level of the court, only the upper third of the windows of the back rooms being above ground. Close to these windows were a large number of filth deposits, doubtless due to the presence of the number of children constantly playing about in the court. From this land, six cases of enteric fever were sent to the Infirmary in the winter of 1864-65: three of them slept in that part of the buildings in which the rooms were under the level of the ground.

These two instances may be taken as samples. They show very well the sanitary defects common to the localities in town which yielded most of the cases of enteric fever. The number sent to the Infirmary forms only a portion of the total which occurred in each locality; a great many (chiefly children) were treated at home.

It seems, then, that in the low, densely populated parts of the town, where the courts and closes were paved, and in which there were few convenient places for the deposition and retention of filth, enteric fever was rare; whilst in the upper and less densely populated districts, where the courts were not paved, and where there existed every convenience for the deposition and retention of filth, it was of frequent occurrence. The inference is inevitable, that the presence of accumulations of filth, combined with the unpaved state of the courts, has something to do with the prevalence of the disease in these localities. But how could these conditions tend to such a result? One of the tenets of the pythogenic theory is, that the fæcal matter must be undergoing a change,—must be in a state of fermentation, before there is generated that particular substance which is the direct exciting cause of enteric fever. In those parts of the town in which accumulations of filth did not exist,—in which the slops and refuse were carried at once to the street and carted away, and in which the courts and alleys were paved, so as to admit of the ready removal of any filth which was deposited, and so as to prevent soakage into the soil,—the fæcal matter was not allowed to remain long enough for the establishment of the process of fermentation: it was removed before it became pestilentially injurious. In those unpaved courts, on the other hand, in which there was a constant collection of filth, every facility was afforded for the production of enteric fever—so far as this could be done in a locality having a good water supply and an efficient system of drainage. The closets and middens were never thoroughly cleaned out; something always remained at the bottom, which was not cemented, and thus both that which was in the midden and that which was spilt on the surface were constantly soaking into the ground. Decomposition and fermentation would take place with more or less rapidity, according to the state of the weather. In the warm weather of summer, these processes would be more active; noxious vapours would be given off from the surface, cases of enteric fever would spring up in the neighbourhood, the stools of these would be thrown into the common filth receptacle, another agent would be added to that already in operation, and the usual autumnal fever would result. Here, as at Lochee, indirect communication of the disease through the stools of those previously affected was probably of not infrequent occurrence. How far this agency acted cannot be determined.

Such is what appears to me the most feasible explanation of the prevalence of the fever in those localities in which the water and drainage were good, and whose only sanitary defect consisted in the retention of filth in an unpaved court.

Of the means to be adopted in order to prevent the occurrence of the disease, it is unnecessary to say anything. A mere statement of the causes which gave rise to it, both in Lochee and Dundee, is sufficient to show that the malady is quite preventable, and that the means of attaining this end are simple in the extreme.

A very remarkable outbreak of fever took place several miles out of town. This case is so interesting in itself, so pregnant with useful facts, and so free from all sources of fallacy, that I shall give a description of it in full; and, in the first place, shall try to convey some idea of the locality in which it occurred.

Six miles to the north-east of Dundee is a short range of hills called the Sidlaws. At their southern base are several farms, two of which, named Prieston and Balletheron (the only ones with which we shall have to do), are a mile and a quarter apart. On the other side of the hills is situated the Glen of Ogilvie,—a short glen, from two to three miles in length, and opening at its eastern extremity on the vale of Strathmore. At the bottom of the glen is a small village, called Milltown, consisting of fifteen or sixteen cottages. About a mile and a half further up the glen resides a small farmer, named Duff, whose household, at the time to which I allude, consisted of himself, wife, and seven children, of ages ranging from 3 to 20. Besides these, he had a son and daughter out at service,—the former at Prieston, the latter at Balletheron, the two farms already referred to, situated at the other side of the hills, and about two or three miles from Duff's house. All the places here indicated had the reputation of being very healthy. With the exception of scarlatina, fever was unknown in the neighbourhood. The water, supplied by streams from the hills, was good and abundant.

Balletheron is an ordinary farm, with nothing particularly noteworthy about it. The whole place was in tolerable order, and the house tidy and comfortable. The back door opened directly into an open court, which separated the dwelling-house from the stable and other out-houses pertaining to a farm. The front door opened into a garden, in which were a good many young fir trees. Close to the kitchen door was an iron grating leading into a covered drain, by which all the slops and refuse from the house were carried away. This drain originally passed westward, beneath the front garden, and lost itself in the fields. In the course of time, the roots of the trees in the garden forced their way into and so obstructed it, that it was found necessary to fill it up and make another. The new one, which, like the former, was untrapped, ran in the opposite direction, —eastward—passed under the reed and cattle pen, and finally emptied itself into a stagnant pool of liquid manure. At the time of visit, the mouth of the drain was flush with the surface of the liquid. The filling up of the old drain and the formation of the new one took place about the middle of October 1864. In the first week of November, the maid (Duff's daughter) sickened, but continued to perform her duties for several days. She gradually got worse, however, and on the 11th or 12th of November was driven home in a gig by her master's son. Ten days afterwards she died. She had no regular medical attendance. Shortly before death she was seen by a medical man residing some miles away, who informed me that the general symptoms were very much those of typhus. Careful inquiry, and the light thrown on the case by subsequent events, leave no doubt that she died of enteric fever.

A week after she went home, the young man who had driven her over took ill, and was confined to bed for several weeks. He was attended by Dr Christie of Dundee, who informed me that the case was a typical one of enteric fever, with eruption of rose-coloured spots coming out in successive crops, and other symptoms well marked. He made a good recovery.

About ten days or a fortnight after the commencement of the last case, the shepherd was seized, and went home to his parents, who lived some fifty or sixty miles off. Here he was attended by Dr Reid of Aberfeldy, who informed me that the man had a smart attack of enteric fever, with moderate head symptoms, marked, and somewhat persistent enteric symptoms, but no eruption at any period. He made a good recovery. The only other occupants of the house in which he was treated were his father and mother, aged between 50 and 60. No other case occurred in the neighbourhood.

About the same time (shortly after the death of the first case), the fever attacked some of the members of Duff's household in the Glen of Ogilvie, and one after another was seized, until the whole family, except the father, was prostrated, and one child, aged 3 years, died. The Duffs were nursed by a woman aged 61, who, with a sister aged 46, resided in one of the cottages in the village of Milltown, at the bottom of the glen. This younger sister, on one or two occasions, went to see the nurse at Duff's, where, she says, she perceived a very offensive smell. About a fortnight after the time at which she paid her first visit, she herself took ill, and was confined to bed for eight weeks. Before she got better, three children, aged respectively 5, 7, and 9 years, residing in the next cottage, fell ill with symptoms of enteric fever, and were confined to bed for three or four weeks. In another cottage, ten yards distant, two children, aged 5 and 12 years, had the same illness. In a cottage immediately opposite, a child, aged 9 years, was similarly affected. About thirty yards from the cottage in which the first case occurred, a child, aged 7, was ill for a month with symptoms which differed in no respect from those of the other cases. In all, eight cases occurred in this little village, or rather in these few scattered cottages. The description given of all the cases was sufficiently clear, and plainly pointed to enteric fever. I afterwards learnt from Dr Wright of Glammis, who attended both the Duffs and the cases at Milltown, that all the cases in the latter locality were undoubtedly enteric fever, and that the only one of the Duffs regarding whose case he had any doubts was the child who died. There was in its case so much bronchitis, that he thought it possible that its febrile symptoms and death might have been due to that affection. The others, however, were true enteric fever.

Duff's son who, as already mentioned, was a farm servant at Prieston, was in the habit of going over to see his brothers and sisters during their illness, staying generally for an hour or two on each occasion. About the middle of January 1865, or two months after his sister's death, but before the fever had ceased to exist in his father's house, he also was seized, and was seen by Dr Nimmo of Dundee, who ordered his removal to the hospital, where he came under my own observation, and where he went through a smart attack of enteric fever, both the eruption and abdominal symptoms being well marked. He made a good recovery. No other case occurred at Prieston. I made careful inquiry at most of the farms and cottages in the vicinity, but found no cases of fever in any other locality besides those mentioned, and no evidence of its existence at any former period.

Here, then, in an isolated farm-house, situated in a locality in which enteric fever was formerly unknown, we have the direction and course of a drain altered, so that, instead of emptying itself on a field, as formerly, it pours its contents into a stagnant cesspool, and within three weeks afterwards enteric fever breaks out. Can the two events be regarded otherwise than as cause and effect? To my mind it seems impossible to regard them in any other light. The possibility of importation of the disease seemed excluded; all the servants and residents had been there for some months at least, no one had been in any locality in which the fever existed, and no person had visited the place who was in the least degree likely to have brought infection with them (supposing such a thing possible). Not only is the formation of such a drain *prima facie* likely to lead to such a result, but its existence is positively the only feasible explanation that can be found of the occurrence of the fever. Three cases occurred at Balletheron, in two of which the disease may possibly have been acquired from the first; but it is infinitely more probable, seeing that they all sprung up within such a short time of each other, that in each case the poison came from the same source. It is noteworthy that the first case occurred in the maid whose duties frequently led her to empty articles into the drain, and who slept in a closet off the kitchen, the window and door of which were very close to the grating leading to the drain. That the second case occurred in the son, who, more than any other person, had frequent occasion to pass from the house to the farm-yard, and who always went in and out by the back door, thus passing over or in the immediate vicinity of the grating, and whose bedroom window (on a higher floor than the kitchen) looked directly over the grating; and that the third case was in one of three men who slept in another building, and who were similarly situated in all respects, except that the one who took the fever was a stranger in the locality, having only been there about three months.

So much for Balletheron. Let us now follow the maid to her father's house in the Glen of Ogilvie. Here, also, in an isolated house, where fever was before unknown, and which presented no sanitary defects likely to lead to its production, we find a case of enteric fever imported; and within a few weeks afterwards, no fewer than seven, probably eight, cases spring up in the same house. We find, also, that two people residing some miles away, one the brother of those already affected, the other the sister of the nurse, after visiting this house, go home and pass through an attack of the same disease; and that in the immediate neighbourhood of the latter, seven other cases spring up before she has well recovered. We find, in short, that immediately consequent on the introduction of one case of enteric fever into a thinly populated and healthy glen, no fewer than 16, probably 17, other cases spring up, all in persons who were in the immediate vicinity of those previously affected. With such facts before us, it seems to me impossible to come to any other conclusion than that the disease was communicated from one to the other. How was this communication effected? Was it by contagion, in the strict sense of the term, or did it take place through the medium of the alvine dejections? This is a point on which a diversity of opinion may exist in almost every case in which enteric fever is communicated. It is obviously impossible to separate entirely the two questions, inasmuch as in every case in which direct contagion is possible, communication of the disease by the stools is equally probable. Wherever there is a case of enteric fever, there are also stools; and to say, under these circumstances, whether, in a given case, the disease was due to direct contagion or to indirect communication through the alvine dejections, would require a more minute knowledge of the exciting cause than we as yet possess. A review of the hygienic conditions affecting the places in the Glen of Ogilvie, during the time at which the above outbreak occurred, may give some facts in favour of one or the other opinion. Duff's house consisted of only two rooms, each of which had two box-beds in it, in which the cases were treated. The stools of all were taken outside, and thrown on a manure-heap close to the house. Here each theory has an equal amount of evidence in its favour. Equal scope was given in all the cases for the operation of each mode of origin. In the cases of the son at Prieston, and of the woman living at Milltown, who visited Duff's, each theory has also an equal amount of support, as on each visit they came both in contact with the patients, and were subjected to the morbific influence of the stools. It is just possible that the three children residing in the cottage next to that which the sister of the nurse occupied may have contracted the disease by coming in contact with her before she took to bed. It is much more likely, however, that it was communicated to them through the medium of her stools, which were thrown on a dust-heap close to the house, and in the neighbourhood of which they were constantly in the habit of running about. They all sickened so nearly about the same time, that the *materies morbi* was, in all probability, derived from the same source in each. The same reasoning applies to all the other cases which occurred at Milltown. There is in each (granting the theory of direct contagion to be tenable) a possibility of the malady having been contracted by direct personal communication with the others, either during the period of incubation, or during the first few days of the illness, before confinement to bed; but there is a much greater likelihood of the disease having been derived from the stools, which, in all the cases, were thrown on the dust-heaps in the immediate vicinity of the dwellings. The facts are in favour of the opinion that in the stools was contained the *materies morbi;* and my own opinion is, that to emanations from them, and not to direct contagion, must be ascribed this limited outbreak. But, it may be argued, if the stools are of such a deadly nature, there would certainly have sprung up many cases in the hospital during the time at which so many patients were under treatment in it; whereas it has been shown, in a former part of the paper, that this did not occur. It has already been stated, that fermentation of fæcal matter seems essential to the production of enteric fever; and it is a well-known fact that the dejections of patients suffering from that disease differ from healthy stools, in being alkaline instead of acid, and in being peculiarly liable to undergo rapid decomposition and fermentation: their speedy removal is therefore desirable. In the hospital, the stools were at once removed, and every care taken, by the use of disinfectants, and by the most strict cleanliness, to do away with the chance of harm resulting either to patients or attendants. At the Glen of Ogilvie, no such precautions were used, the stools being in every case thrown on a dust-heap close to the house, and in the vicinity of which the inhabitants, especially the children, were constantly going about.

One or two other points of interest are worthy of note here. The mass of the cases which came from Dundee and Lochee occurred in persons who were comparative strangers to the locality; few had been more than two or three years in the neighbourhood, many only a few months, and several only a few weeks; it was very rare to get a native. Of the scattered sporadic cases which came from parts of the town not noted as yielding an unusual number, nearly all were servant girls who had recently come from other parts of the country. This liability of strangers to enteric fever has very constantly been noted by observers, and is of itself sufficient to lead one to suspect the existence of some local cause to which the system may become habituated by exposure (Murchison). It seems to me, however, that this is not a very satisfactory explanation, and I am more inclined to adopt the view advocated by Dr Parkes, and to think that this immunity of the regular inhabitants is due in great part to the protecting influence of a prior attack, the proof of which is wanting, because it is only within a comparatively few years that enteric fever has been generally recognised and diagnosed as a separate and specific form of fever; and because it was even at a more recent period that it was shown to be the same disease with which physicians had so long been familiar under the name of infantile remittent fever; not indeed till 1848, when Dr West demonstrated the fact, was this identity fully recognised in this country; and even now, with a full knowledge of all the symptoms, and a thorough conviction of the identity of the two diseases, it is, in some cases, very difficult to say whether or not the patient is really suffering from this form of fever; and this difficulty is especially great in children, in whom the disease may exist in so slight a form that nothing more definite can be observed than that the child is generally out of sorts, gives evidence of some gastric derangement, and is restless and feverish at night. The fact so often noted that children are particularly liable to be attacked (of which we have a good instance in the outbreak at Milltown), may be partly explained in the same way; there is a possibility of the parents having had a similar attack in childhood. There are undoubtedly many instances on record in which the fever has broken out in a locality in which it was previously unknown, and has attacked those of all ages indiscriminately, showing no particular preference for strangers. In most of these cases there has been found some local defect of recent origin, giving rise to pollution either of the water or atmosphere; the outbreak at Balletheron, due to alteration of the course of a drain, is a case in point. Whilst holding the opinion that much of the apparent immunity enjoyed by the regular inhabitants of a locality is to be explained by the occurrence of a previous attack, I am also prepared to believe that, to some extent, recent residence may act as a predisposing cause, especially when accompanied by that mental depression and general want of vigour and elasticity which is so apt to take possession of those separated for the first time from the friends and associations of childhood, and cast amongst strangers in an unknown locality.

At the time at which this outbreak of enteric fever occurred, typhus was also epidemic; and it is worthy of note that those localities in which the latter most prevailed, were exactly those in which fewest cases of the former occurred, and *vice versa*. Enteric fever was most prevalent in Lochee, and in the higher, less densely populated parts of the town; whilst typhus found its favourite abode in the low-lying, densely populated closes of the Overgate, Nethergate, and surrounding localities. Lochee, which supplied the majority of the enteric cases, sent into the hospital only 2·7 per cent. of the total typhus admissions.

Another remarkable fact is that Lochee, which was the principal seat of enteric fever, the chief agent in the production of which we have seen to have been impure water, was, at the commencement of last winter, the seat of an outbreak of cholera, presenting in a well-marked form all the symptoms of that disease. The outbreak was a sharp one, and was confined to the same locality which furnished so many cases of enteric fever, the low-lying part of the village called the Bog. The upper part of Lochee and Dundee almost, if not quite entirely, escaped. At this time (after an interval of two years) I repeated my analysis, and found the water in much the same condition as on the former occasion. At the request of the authorities, Dr Stevenson Macadam, of Edinburgh, made a minute analysis of the water from four of the wells in the cholera locality; the result was as follows:—

	No. 1.	No. 2.	No. 3.	No. 4.
	Grains.	Grains.	Grains.	Grains.
Saline matter dissolved in one imperial gallon of the water, principally carbonate of lime, sulphate of lime, and chloride of sodium, ...	52·32	41·60	30·80	41·44
Organic matter and nitrates dissolved in one imperial gallon, ...	12·22	4·90	8·68	10·34
Total matter in solution in one imperial gallon, ...	64·54	46·50	39·48	51·78

When the state of the water was made known, the wells were closed, water was supplied to the inhabitants from another source, and the disease speedily declined. One fact struck me. Luis' Land, which was one of the chief seats of enteric fever, escaped cholera, or had it to only a very slight extent, and yet the water which I got from it for examination was as fully charged as formerly with nitrates and nitrites. It was, however, got with greater difficulty, and, on making inquiry, I found the explanation of the exemption of this locality from cholera to be as follows:—The land, as formerly mentioned, is not at the lowest part of the village, but close to it. It seems that, as wells have been sunk in connexion with other lands in the lower lying Bog, the water supply to the well at Luis' Land has been drained off by the new ones, until latterly very little could be got, and that with so much trouble that the inhabitants were in the habit of getting almost their entire supply from other sources, chiefly the east well,—their own well at the time of the cholera outbreak being almost deserted.

The history of this limited outbreak of cholera is by no means singular. In many other villages of Scotland the disease appeared about the same time; and in all regarding which I could get information, this impure state of the water was found. In the Edinburgh Medical Journal for last February, Dr J. Balfour gives an account of an outbreak which occurred at Slateford, near Edinburgh. The water on analysis was found largely impregnated with organic impurities. The history of last winter's visitation forms another link in the chain of evidence which goes to show the intimate connexion existing between cholera and impure water. It seems, at first sight, a remarkable fact, that the large towns which, on all former occasions on which cholera visited this country, suffered so severely, should have escaped on this; but when we bear in mind the facts, that since the last great epidemic their drainage has been so much improved, and that their water supply, instead of being got from streams polluted by sewage, is brought from localities far removed from the possibility of such contamination, our surprise ceases; and when we regard these facts in the light which more recent and extended experience has given us, we may, I think, indulge the hope, if not the expectation, that our towns are not likely to be again the seat of such wide-spread and fatal epidemics as devastated them on former occasions. Such limited outbreaks as those which occurred in so many villages last winter would probably never have taken place if the water supply had been pure and wholesome.

I have referred to this matter simply for the sake of indicating the similarity which exists between the sanitary defects leading to the production of enteric fever and those which tend to give rise to cholera, showing, so far as mode of origin is concerned, a closer connexion betwixt these two maladies than betwixt typhus and enteric fevers. Of course, an increased rainfall would have the effect of carrying into the wells a greater quantity of impurities. Last autumn was more than usually wet; the wells situated in the low-lying Bog (the cholera and enteric fever locality) would receive the water which had entered the ground on the slope of the hill, and would carry along with it the refuse derived from localities farther up, as well as those in the immediate neighbourhood, as was shown by the failure of the supply at Luis' Land.

The inferences drawn from the foregoing facts may be briefly summed up as follows:—(*a*) That most of the cases which occurred in Lochee were caused by contamination of the water by sewage matter; (*b*) that those in the courts of Dundee were due chiefly to the inhalation of noxious vapours emanating from the soil; (*c*) that the outbreak at Balletheron was produced by foul air passing from a stagnant cesspool along a drain leading to the door of the house; (*d*) that the prevalence of the fever at the Glen of Ogilvie, immediately consequent on the importation of a case, was due to communication of the disease through the stools of those previously affected, an agency which likewise tended to increase the number of cases, and to prolong the duration of the disease in Lochee and Dundee; and (*e*) that in no case is there the least necessity for calling to our aid the agency of an epidemic influence, all the facts being fully explained by tangible causes; the greater prevalence of the fever at the end of 1864 being quite explicable by the nature of the weather which prevailed during the summer and autumn months. The occurrence of the outbreak at Balletheron in November was, of course, accidental; the alteration of the course of the drain at another time would probably have led to the same result.

It may also, I think, be generally inferred, that when enteric fever becomes unusually prevalent in a locality whose water supply and drainage are known to be good, and about which no filth is allowed to remain, the probable cause of this unusual prevalence is likely to be some accidental contamination of the water or derangement of the system of drainage,—an agency which may come into play as readily in spring or summer as in autumn or winter.

ARTICLE II.—*On Sclerodermia and its relation to Elephantiasis Arabum.* By Dr VALD. RASMUSSEN, Prosector in Pathological Anatomy in Copenhagen. Translated from the *Hospitals-Tidende* for May and June 1867, by WILLIAM DANIEL MOORE, M.D., Dub. et Cantab., M.R.I.A.; Honorary Fellow of the Swedish Society of Physicians, of the Norwegian Medical Society, and of the Royal Medical Society of Copenhagen; Secretary for Sweden, Norway, and Denmark to the Epidemiological Society of London.

(*Continued from page* 213.)

DR PLU'S case is extremely interesting, and it is, therefore, to be doubly regretted that it was not the subject of more accurate investigation in an hospital, and especially that, as well as in Binz's case, there was no dissection. Dr Plu looks upon the œdema in the arms and legs as simple œdema, but there can scarcely be a doubt that it was due to a condition similar to that observed in my patient's arm, namely, the acute infiltration stage; the same applies to the œdema occurring in the arms and legs in Binz's case.

Sclerosis.—Anatomically, this stage is characterized by the development of connective tissue from the lymphoid sheaths around the vessels and its shrinking. It is this sclerosis which Gilette and Arning, as in general all investigators, with the exception of Mosler, have exclusively referred to. The symptom which is most characteristic, and from which the whole disease has acquired its name, is a peculiar hardening of the skin and of the subcutaneous tissue, which steadily increases until it becomes of bony hardness, with contraction and shortening of the part. The skin cannot be lifted into a fold, and is, as it were, soldered to the subjacent tissue. Hereby the mobility of the part becomes gradually more and more impaired, or finally quite destroyed. If the face, as often happens, be affected, its stiff marble-like appearance, and its sluggish motion in every gesticulation, are striking. The wrinkles, whether natural or produced by age, are absent, the forehead cannot be puckered, the eyelids can be only imperfectly moved, and are in general as if half shut; the nostrils are dilated, the upper lip is drawn upwards as in smiling, and the upper row of the teeth are thus exposed. Movement of the joints is also more or less impeded; the arms and legs, but especially the fingers, are held in a constantly more or less flexed position, and can neither be fully extended, nor can the hand be clenched. In some cases (Mosler, Wernicke) the skin becomes, where it glides over bony parts, as the clavicle, sternum, etc., highly attenuated, shining, and of a cicatrix-like appearance, as after a burn. As occurring more rarely, though more frequently in this stage than in the first, I may also mention a tendency to fissures and ulcerations, whether occurring spontaneously or after comparatively slight traumatic causes; they are either superficial, and then heal tolerably easily, leaving white smooth cicatrices; or deeper, and then often obstinately resist all treatment. Such ulcerations occurred in seven cases: Förster, Binz, Wernicke, Mosler (two cases), Gamberini, Plu.

The colour of the skin is sometimes in this stage natural, though most frequently it is pale, of a waxy yellow, or in some cases, among which that of Auspitz is especially remarkable, of a deep brownish tint. This coloration was, in some instances, most strongly marked in the most sclerotic parts (Nordt, Wernicke), which was also the case in my patient, while no such difference was demonstrable in Mosler's first observation, and it is also denied by Arning.

The functions of the skin are in general not at all, or only slightly, disturbed. Sensation is, even in the most careful investigations with compasses, according to E. H. Weber's method, not found to be diminished, except by two earlier observers (Eckström, Rilliet). The same is true of the temperature, and the slight deviations from the normal state which have been met with are most naturally explained by the difficulties attending the application of the thermometer. The perspiration seems, in the majority of cases, to have been normal, which is in accordance with the results of the anatomical investigations, the sudoriparous glands and ducts having been invariably found without any essential change. Only in two cases (Curzio, Wernicke) is it stated to have been entirely absent; in three (Rilliet, Guillot, Nordt), to have been diminished; in Auspitz's, one of Mosler's, and in my patient, the perspiration was even abundant. The hair is in general natural. In Brück's and Nordt's cases, however, the principal hairs were short, dry, broken off, and in Wernicke's the down had, on the parts most affected, either wholly disappeared or become bent and brittle.

Sclerema does not exclude other cutaneous diseases; thus acne has been observed (Köbner), varioloid (Bazin, Arning), zona (Bazin). This is easily explained, as both the epidermis and the papillæ are intact in sclerema.

The longer the disease lasts, the more the affected part of the skin sinks below the level of the rest, and the more considerable do the rigidity, contraction, and hardness become. Thus we see in our case the whole of the right mamma reduced to a small tubercle of bony hardness, so that the breast, as in Arning's case, presented the appearance of that of a man. All elasticity is gone, and the patient is shut up as in a solid cuirass. Although the general health as a rule is not affected, the patient is extremely incommoded; and if the sclerema has spread over a great part of the chest, the respiration becomes laboured. Gilette assumes that the thoracic symptoms which occur in some cases, are due to an incipient affection of the bucco-laryngeal mucous membrane, but this has in no case been anatomically demonstrated. Still its possiblity ought not to be absolutely denied, the less so as the tongue and throat have in some instances been found affected. In this way, deglutition may be so far impeded, that artificial nutrition may become necessary (Arning's case); in the three cases (Curzio, Rilliet, Gilette) in which the tongue was affected, it appeared hard and swollen, and both deglutition and articulation were thereby more or less impaired.

Mode of extension of the disease.—The earlier view, advocated especially by Arning, that the disease was almost exclusively confined to the upper part of the body, is refuted by more recent observations, especially those of Förster and Wernicke, where the affection began on the leg, and the face continued free. It must indeed be admitted that the disease begins most frequently in the face or in the neck, and thence spreads to the occiput, chest, and arms; but on the other hand, it cannot be denied that it may take its starting point from any part of the surface of the body, and also that it may arise in many scattered points, either simultaneously or at intervals. In general, the affection advances slowly from the place first affected; only in rare instances does it spread over great extents in the course of a short time, even in a few days (Köhler).

Duration and result.—The disease has, in the great majority of instances, a chronic course, and may exist, when it has attained a certain development and has become stationary, for years without perceptible changes in the affected part of the skin, or in the general health. Only where the sclerema has spread over great parts of the body, especially when the respiration is impeded by its extension over the whole chest, or nutrition is interfered with by the immobility of the jaws and lips, or by the propagation of the affection to the œsophagus, is the general health gradually more and more influenced, and the patient slowly succumbs, as in Arning's case, under an increasing marasmus. In other instances death occurs as the result of complications, as phthisis (Förster), morbus Brightii (Auspitz), diseases of the heart (Gintrac). The disease may, however, run a very acute course; this was the case in Binz's, Plu's, and my patients. In the first two, which present a striking resemblance in symptoms and course, the infiltration was very rapidly developed, and attained a very considerable degree. Death occurred in both, before the sclerosis had commenced in all the infiltrated parts, under increasing exhaustion and hectic. In my case death was likewise undoubtedly caused by the sclerema, as was evidenced by the metastases met with in the internal organs, to which I shall hereafter revert, and not least by the hæmorrhagic pleuritis, which as a rule may occur in disorganization (tubercles, cancer) of the pleuræ, or in the course of chronic diseases with profound affection of the whole system.

Etiology.—The causes of the disease are still enveloped in obscurity. In a great number of cases, sudden and violent cooling of the skin is assigned as the cause. Arning and Köbner put forward a tendency to rheumatic affections, at all events as a predisposing cause. My case does not serve to illustrate the disease in this respect. Diseases of the heart have been present in some of the more recent cases (Köbner, Köhler, Roger, Gintrac), but they are nevertheless scarcely more than an accidental complication. In general, it is persons in the lower classes of society who are attacked; but Lasègue's view, that the subjects of the disease are principally badly fed and cachectic individuals, is quite incorrect. The female sex is attacked much more frequently than the male. Of the 40 cases observed, 30 were those of women and 10 of men.

With respect to age, the disease occurs most frequently in middle life. In 36 cases, in which the age is stated, it was as follows:—From 1 to 6 years, 1 (Bärmann); 8 to 10 years, 3 (Gilette, Rilliet, Roger); 13 years, 1 (Köhler); 18 to 25 years, 9 (Curzio, Henke, Fuchs, Fiedler, Jäger, Förster, Bazin, Villemin, Gamberini); 28 to 35, 13 (M'Donnell, Rilliet, Bouchut, Forget, Arning, Brück, Nordt, Mosler 2, Köbner, Wernicke, Auspitz, Grandidier); 40 to 50, 4 (Guillot, Grisolle, Binz, author); 50 to 60, 1 (Plu); 65 to 72, 4 (Putégnat, Pelletier, Eckström, Pierquin). That is—from 18 to 35 years, 22 times; only 4 times before that age, and only 9 times after the 40th year. This decrease with age of the tendency to the disease is placed by Köbner in connexion with the diminution of the fulness and secretion of the skin which advanced life brings with it.

The *Prognosis* follows from what has already been said: complete retrocession of the disease is possible only in the first stage, and in this respect one of Mosler's cases (our 7th case) is of great interest, the infiltration of the leg having completely disappeared in the course of a month. If the disease has, on the other hand, advanced into the sclerotic stage, complete recovery is impossible. Although, in a great number of cases, it has scarcely affected the general health, its prognosis can by no means be set down as so favourable as has hitherto been the case, when all writers were agreed that death could never be occasioned by the disease itself. That this, however, may be, is proved by the two observations of Binz and Plu; but above all by my own, where the local process had produced a constitutional affection, with metastases to internal organs. In all these cases, the patients were beyond 40 years of age.

The *Treatment* has consisted in the employment of different remedies, especially mercury and iodine, most frequently in connexion with different kinds of baths, particularly with sulphate of iron (Gilette), alkaline, aqueous and spirituous vapour baths, mud baths, etc. The mode of treatment which for the moment deserves most reliance, and at all events ought to be tried, is that recommended by Mosler, namely, strengthening diet, large doses of iron and cod-liver oil, inunctions with a salve consisting of black oxide of copper ℈ii, glycerine ʒi, lard ℥i, with vapour and chalybeate baths, and, if circumstances permit, a course of treatment at Franzensbad. Yet we must not expect great results from this or from any treatment when the disease is far advanced, and the improvement which is said to have been observed is little more than accidental and transitory oscillations in its course; in Köbner's case, such an improvement took place although the patient had not employed the remedies prescribed; in Arning's, every treatment, including Mosler's, was without a trace of result. In the first stage in slighter cases, retrocession is, according to Mosler's experience, possible, but whether this is to be ascribed to the treatment, must for the present remain doubtful; in the severe cases, running a rapid course, as in Binz's, Plu's, and mine, all treatment was in vain.

Nature of the disease.—Respecting the nature of the disease, and its place in the nosological system, great difference of opinion prevails, and even the writers who have had the opportunity of instituting anatomical investigations, express themselves very undecidedly upon this point. Grisolle regards his case as a rare form of chronic erythema, while Forget seeks the nature of the disease in a slow inflammation of the corium with consecutive sclerosis, and therefore proposes to call the affection corionitis or sclerosthenosis cutanea. Bouchut considers the disease as essentially the same as sclerema neonatorum, and finds a difference only in the temperature, which in the latter falls considerably—even so low as 71·6° Fahr. (Roger). Gilette and Roger, on the other hand, discover only a remote similarity between the two diseases. Fuchs regards the affection in his case as depending on a rheumatic exudation in the paniculus adiposus with contraction. Fiedler looks upon the disease as an atrophy of the skin and subcutaneous connective tissue. Villemin supposes the existence of an infiltration of the skin similar to that in many exanthemata, as, for example, urticaria, and Bazin assumes a fibro-plastic exudation.

But so long as no anatomical investigations were on record, all solid basis on which to found a judgment as to the nature of the disease was wanting. Förster was, as we have seen, the first to whose lot it fell to institute such an investigation, and from this he stated, though with some reserve, that he was most strongly inclined to refer the disease to the chronic inflammations in internal organs connected with degeneration; and this view is perhaps the one which at present receives most acceptance. Arning, who, as I believe, incorrectly lays so much weight upon the great development of elastic tissue met with in his cases, thinks, for this reason, that the disease ought not to be looked upon as a chronic inflammation, though he does not find himself in a position to propose any other theory instead. Wernicke assumes the existence of two stages in the disease; in the first we have hypertrophy and induration, corresponding to the description of sclerema given by earlier writers; in the second atrophy, to which the extensive cicatrix-like changes of the skin occurring in his case should be due. The hypertrophic stage is said to be anatomically characterized by the changes described by Förster; in the atrophic, a fatty metamorphosis of the inflammatory exudation is assumed to take place, in which this is resorbed, and by pressure of the indurated skin an atrophy of the subcutaneous connective tissue is now produced. For his own case he claims a new name, "Cicatrizing Sclerema of the Skin," to which cases of Addison's keloid should be referred. The whole of this assumption wants, as is easily seen, any anatomical basis, and bears not the slightest criticism.

Virchow, who does not appear to have himself observed any case of sclerema, nevertheless says,[1] that there can be no doubt that both scleriasis (sclerema adultorum) and sclerema neonatorum, which latter had already been classed by the earliest German observers with erysipelas, are very nearly allied to elephantiasis, although lymphatic dropsy has been almost always observed in the first. Virchow's idea, however, of elephantiasis is very wide, as he is inclined to consider the chronic inflammations in internal organs (cirrhosis hepatis et pulmonis) as elephantiastic formations, differing only in their seat from the more limited or diffuse connective tissue formations on the surface of the body, designated as fibromas, or especially as elephantiasis; in the same manner, he views some of what are called tumor albus, molluscum and steatoma. The essential character of elephantiasis is, according to him, the connective tissue formation in the corium and subcutaneous connective tissue. When elephantiasis is taken in so wide a sense, there cannot, of course, be any doubt that sclerema may, with the greatest ease, obtain a place in this category.

There is, however, both in a clinical and an anatomical point of view, a much greater and more essential accordance between what has been called sclerema and elephantiasis—a similarity, indeed, which is so great, that both processes must be looked upon as essentially one and the same.

First, with respect to its clinical aspect, I believe that both my own case and those I have collected from literature are sufficient to demonstrate this similarity. To render this more striking, it will, however, be advisable briefly to sketch the course of elephantiasis as it occurs in tropical climates.

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[1] *Die krankhaften Geschwülste*, bd. 1, p. 302—*note*.

Elephantiasis is ushered in with rigors, followed by great heat, restlessness, headache, and an inflammatory process, which has the character of an erysipelas, extending from the part first attacked, in general the lower extremities, often over a considerable space, with moderate redness of the skin, and a deeply firm, œdematous swelling (lymphatic œdema, Virchow). The lymphatic vessels are early attacked, and run, as hard, red, and tender cords, along the affected part; the lymphatic glands swell and pass into suppuration. The fever lasts, in general, one or two days, and then terminates in copious perspiration. So long as the fever continues, the swelling increases in the part; but after the occurrence of the perspiration and the diminution of the fever, the pain disappears, and in a short time the swelling also vanishes. After the lapse of a shorter or longer time, in general after some months, a fresh, completely similar attack occurs; this, too, may disappear. But after several such attacks, often even after the third, the disease passes into its second stage, the swelling becoming stationary, and being slowly developed into the well-known deformity which, with respect to the leg, the most usual seat of the disease, is designated as "elephant-leg," "Barbadoes-Madurafoot."

There is also an apyrexial form of elephantiasis,[1] although occurring less frequently. It may be developed in any part of the body, without, or at all events with such slight, fever, that the patient has no feeling of the latter, and only very slight pain along the lymphatic vessels. The part increases, however, notwithstanding, in size, and the skin becomes tense and shining.

It is to this apyrexial form especially that sclerema presents the greatest similarity, or at all events approaches so closely, that it may be considered as a milder form of elephantiasis. It is true that, as we have seen, the swelling of the lymphatic glands is absent, but the similarity appears to me to be in other respects striking; even the circumstance characteristic of elephantiastic hardening, that the natural folds around the joints are left free, has been established in my case. The rare form of ulcerating elephantiasis also finds its counterpart in sclerema in the ulceration described.

I have already, in the introduction to this essay, called attention to the fact, that the fourth form of Alibert's cutaneous cancer, carcinus eburneus, without any doubt, consists essentially of sclerema. It is designated by Alibert "as a hardening, a morbid solidity, swelling and actual hypertrophy of the cellular tissue of the skin." One would suppose, he says, that he had before him the distressing symptoms of the Arabian lepra; and he speaks of a man whose fore and upper arm had attained such an immense size as to resemble an elephant's foot. Although he says he could communicate a great many cases, he quotes only two instances of this his cutaneous cancer.[1]

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[1] Duchassaing: "Etudes sur l'Éléphantiasis des Arabes."—*Archives générales*, 1854, p. 412.

[These cases the author reproduces in a note; but, for reasons similar to those already assigned, I content myself with giving the reference to them.—*Translator.*]

If we now pass over to the anatomical conditions, we shall find a still more striking similarity. In the stage of sclerema, which I have designated the stage of infiltration, a clear fluid was found in the meshes of the subcutaneous connective tissue, the basement substance of the same and the corium being highly infiltrated with a similar fluid; but what particularly deserves our attention is, that everywhere in the surroundings of the lesser vessels, an exceedingly abundant development of lymphoid cells was met with, forming thick sheaths around the vessels. The peripheral cells in these sheaths were more elongated, and were separated from one another by a fibrillar intervening substance, soluble in acetic acid, so that there could be no doubt that the formation of connective tissue proceeded from these. Gradually, as the formation of connective tissue became more abundant, the subcutaneous connective tissue at the same time more tendinous and like the corium, a remarkably large amount of elastic filaments was developed, while lymphoid sheaths around the vessels diminished, so that they were only here and there demonstrable where the sclerosis was most strongly marked (the right mamma).

We find precisely the same conditions in elephantiasis. The materials I have had for examination are two enormous Barbadoes legs, with the character of elephant's feet exquisitely marked, which are to be found in the Pathologico-anatomical Museum, and belonged to two different individuals. When a section was made of these from the shin, where the thickness both of the epidermis and corium, and of the subcutaneous connective tissue, in comparison with that of those of the foot, was relatively slight, ½—1 centimètre (·1968″—·3937″), on the foot 3—4 centimètres (·1·1811″—1·5748″), there were seen, in addition to a moderate prolongation of the papillæ, a copious deposition of pigment in the rete, and a great condensation and increase of volume of the corium; the fasciculi of subcutaneous connective tissue were greatly increased and decussating, but so that remains of fat-cells were still demonstrable in many places; but what there especially and immediately caught the eye, was an exceedingly abundant development of lymphoid cells, forming sheaths around all vessels. The abundance and extent of these will be most easily understood from the subjoined drawing.

Not unfrequently these lymphoid sheaths were met with of still greater size, so that the breadth of a vessel immediately under the papillæ was found to occupy the whole field of vision of a Hartnack's microscope (system 7, ocul. 2). In the periphery of these sheaths the cells were seen to be elongated, though only in a rather slender belt, outside which there was one more or less broad of fibrillar connective tissue. The lymphoid sheaths extended also up into the papillæ, and often occupied almost their whole breadth. If, on the other hand, we went down to the foot, where the epidermis was greatly thickened and horny, and the surface, in contrast to the almost smooth surface on the upper part of the skin (elephantiasis lævis seu glabra), was highly uneven, papillar (elephantiasis papillaris, verrucosa), the state of the parts was different. Here the entire subcutaneous tissue, almost down to the muscle, was changed into a homogeneous, tendinous, very shining tissue (lardaceous substance), composed of thick sclerotic bundles of connective tissue entangled in each other, without a trace of fat; the papillæ were much elongated, often fissured. Vessels and lymphoid cells were

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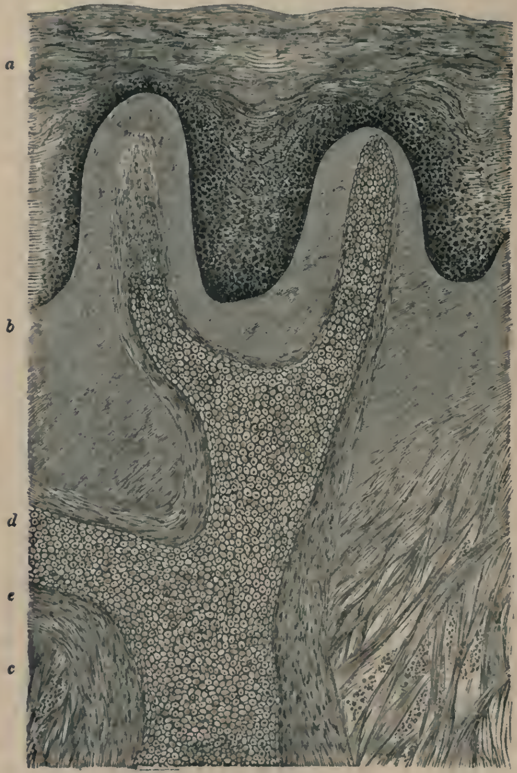
[1] Clinique de l'Hôpital Saint-Louis; Paris, 1833; p. 201.



ELEPHANTIASIS—SECTION FROM THE SHIN.

a. Epidermis. *b.* Corium. *c.* Subcutaneous connective tissue. *d.* Lymphoid sheaths of the vessels. *e.* Fibrillar connective tissue, developed from the latter.

scarcely seen, and where they were met with there were only a few cells, but so much the greater quantity of fibrillar connective tissue along the course of the vessels. In sections from different places between these extreme points, the transition between the two was very distinct; often a smaller vessel issuing from a larger, which still had a thick lymphoid sheath around it, was seen gradually to be lost in a fibrillar, abundantly nucleated connective tissue, and in the woodcut the commencement of this is seen in one of the papillæ. Everywhere the thickness of the lymphoid sheaths of the vessels was in inverse proportion to the formation of connective tissue, and in the highest development of the latter they disappeared completely, so that it was quite evident that the lymphoid cells in these sheaths were the matrix of the entire formation of connective tissue. As to the vessels themselves, I cannot express any decided opinion, as I have had only old preparations from the Museum at my disposal; I believe, however, that, as in sclerema, they are essentially the smaller arteries. Whether, in the most extreme degree of sclerosis, they become obliterated or remain open, I cannot venture to decide. Rindfleisch says he has seen the latter.

The similarity between sclerema and elephantiasis is, as even a momentary glance at the figures will show, very striking; and, so far, the only difference observable is, that the formation of the lymphoid sheaths around the vessels in the latter is on a much greater scale, reaching quite to the capillaries, which was never observed in sclerema, where only at most an abundant formation of nuclei took place on the capillary vessels; still, it may perhaps be advanced, that the lymphoid character of the cells in elephantiasis was more prominent, so that they had quite the appearance of cells occurring in the lymphatic glands.

From these observations we are therefore justified in concluding that the two diseases depend upon one and the same process, and that they are, in essential points, identical. The question which, in the next place, naturally suggests itself is, Of what nature is this process? Virchow, to whom we are chiefly indebted for the most of what we know respecting elephantiasis in an anatomical point of view, states, that in the commencement we meet with the cells of connective tissue enlarged and frequently in a condition of incipient division, and that in the small lymphatic ducts we find a thicker epithelium; these statements, especially the last, are, however, rather indefinite. The essential point in the disease is, according to Virchow, the formation of connective tissue; the œdema he looks upon as a secondary occurrence, as the fibrinogenous fluid, which is met with everywhere in the swollen parts, is due partly to the irritative process, which has attacked the tissue itself, whereby the latter developes a greater quantity of fibrinogenous substance; and proceeds partly from the normally formed lymph, which, by reason of the early hyperplastic swelling of the lymphatic glands, cannot pass through these, and therefore accumulates, partly in the dilated and attenuated lymphatic vessels, partly in the tissue itself. He at the same time quotes a statement of Teichmann, who says that he has in elephantiasis seen dilated lymphatic vessels in the papillæ; he admits, however, that this dilatation of the lymphatic vessels is far from constant.

This view of the œdema as depending, at least in great part, upon an obstruction of the lymphatic glands, is certainly rather hypothetical; otherwise it appears to me that we should much more frequently meet with such an œdema; but how often do we not find the lymphatic glands extremely swollen, without any œdema occurring in the corresponding part, assuredly because a collateral circulation, as in the bloodvessels, removes the lymph which has formed. Only where the glandular swellings are so considerable as by their pressure to obstruct the efflux of the blood through the veins, do we see the œdema take place.

From my observations I should infer, that the essential element in the disease must be sought in the adventitious surroundings of the vessels in the skin and the subcutaneous connective tissue, in the lymphoid cells which are here developed in such abundance, and we shall go more fully into the signification which may be ascribed to this formation. It was, some years ago, advanced by Brücke[1] and Leydig[2] that the adventitious surroundings of the smaller bloodvessels are the proper starting points for the formation of lymph, an assumption which has been fully confirmed by Prof. F. Schmidt's investigations of the follicular glandular tissue in the mouth and œsophagus;[3] here it is especially from the adventitious surroundings of the smaller veins that an abundant development of lymph granules takes place, which, by the pressure of the new broods formed next the vessel, are gradually driven out into the meshes of the granular tissue. Now, although this formation of the lymphatic granules in the adventitious surroundings of the vessels has been demonstrated only for certain localities, and partly in the lower animals, it is possible that it is much more extensive than is generally admitted; that the formation of lymph-cells in the great and extensive vascular region takes place only sparingly in any one place,[4] and that they are rapidly removed through the lymphatic circulation, and thus easily escape observation; while this development of lymph-cells in elephantiasis and sclerema becomes so considerable, that their removal in this way cannot keep pace with the abundant formation.

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[1] Zeitschrift d. k. k. Gesellschaft der Aerzte zu Wien, 1853.

[2] Unters. über Fische u. Reptilien. Berlin, 1853.

[3] Det folliculære Kirtelvæv i Mundhulens og Svælgets Slimhinde hos Mennesket og Dyrene.—[The Follicular Glandular Tissue in the Mouth and Œsophagus in Man and Animals. Copenhagen, 1862.]

[4] Teichmann found lymph-cells in small quantity in the lymph from the arm and leg, before they had passed through any lymphatic gland. This indicates that the lymph-cells may have a peripheral origin. While Virchow, on the other hand, assumes that the lymph-cells are formed exclusively in the lymphatic glands, it is also remarkable that, as he himself states, we find such numerous small, round cells in the fluid which flows out on puncturing a part affected with elephantiasis; he gives no information as to the seat or mode of this cell formation.

The more recent investigations respecting the lymphatic vessels have moreover shown, at least for certain localities, a peculiar relation between arteries and lymphatics, which, if greater generality ought to be attributed to it, may also acquire importance in reference to the disease under our consideration. Thus Robin, as early as 1859, observed a slightly streaked sheath surrounding the vessels in the gray and white substance of the central nervous system; he saw the vessel within this sheath surrounded by a variable quantity of colourless fluid and bodies resembling lymph-granules, in variable number, and he compared this sheath and its contents to the lymphatics surrounding the arteries of reptiles. Later researches of Hiss[1] have proved, that this system of canals surrounding the vessels consists really of lymphatics, and that a similar relation occurs in the vessels in the pia mater.

If we may venture to give this observation likewise a more general application, we shall find the impediment to the removal of the lymph to lie in the peripheral lymphatics, whereby the lymph from the skin and the subcutaneous tissue cannot find an adequate mode of egress.

It will, however, readily be admitted, that our knowledge of the origin of the lymphatics and the source of the lymph-cells is still so uncertain that we can only, with great caution, employ it pathogically. But if we keep to direct observation, we shall see that everywhere in the adventitious coat surrounding the peripheral vessels an adenoid, lymph-preparing tissue is developed, and in this lies the point characteristic of and essential to the disease; and the view held from the earliest period, that elephantiasis was related to the lymphatic system, which was assumed not only because its glands were early swollen, and because red, tender, swollen cords were formed along the course of its vessels, but, moreover, on account of the lymphatic, fibrinogenous nature of the blood, and the spontaneous coagulation observed in the urine, also finds in it a confirmation. These two latter changes Virchow is inclined to consider as secondary to the local erysipelatous process, or to explain by the fact that there are lymphatic constitutions in which the lymphatic system developes an unusual degree of activity, and in which it is therefore also more vulnerable. But it appears to me that, in my case, the entire of this fibrinogenous nature of the blood, and, on the whole, the abundant development of lymph in the affected part, obtain a much simpler explanation, and one more based upon definite anatomical changes; as the adventitious coat surrounding the smaller vessels in the whole skin and subcutaneous connective tissue is lymph preparing, the absolute quantity of lymph in the affected part is thereby increased, and at the same time the blood is supplied in excess; thus, its lymphatic nature is easily explained; while, according to Virchow's retention theory, in accordance with which a diminished supply of lymph must take place, it is inexplicable.

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[1] Zeitschrift f. wissenschaftl. Zoologie, bd. 15, p. 127.

All the anatomical conditions in elephantiasis may, without violence, be deduced from this development of lymphoid cells in the vascular sheaths. If the process be very acute, very abundant small granular cells, pus-cells, are developed from the adventitious cells,—between these and the lymphoid cells there is no essential difference,—we then get an abscess,[1] great or small; if the process be somewhat less intense, numerous lymphoid cells are indeed formed, but these pass from the periphery gradually into connective tissue cells with intervening substance; the connective tissue so formed becomes sclerotic, and the original cells disappear. This is the usual form under which elephantiasis occurs. Lastly, we find a form where the lymphoid cells are comparatively scanty, the formation of connective tissue is also scanty, and this then becomes sclerema, and, perhaps, gives rise to certain forms of the apyrexial elephantiasis.

That this source of the formation of connective tissue in elephantiasis has so long escaped general attention, can be ascribed only to the circumstance that the disease has been essentially investigated only in so late a stage, that the formation of connective tissue has entirely, or almost entirely, ceased; and the lymphoid vascular sheaths have therefore also disappeared. It may also be explained by the fact that Rindfleisch,[2] in his recent work, has put forward so constrained and paradoxical a view as this, that the bundles of connective tissue in the later stages of elephantiasis are elongated by a softer tissue, which he says he has found in their extremities, becoming gradually condensed during growth. The individual bundles are said to be thickened by being crossed in many places by this softer tissue of other bundles, so that this contributes at once to the growth, both in length and thickness. The latter is, however, limited, for when the bundles have attained a thickness of about half a millimètre, the growth ceases in this direction. But Rindfleisch himself admits, that the principal support for this theory must be sought for in the fact, that he has not been able to discover any other productive process within the hyperplastic cutis.

If we return, however, to sclerema, to inquire on what foundation the theory rests, which may still be said to be that most generally received, namely, that the disease is either a simple hypertrophy of the connective tissue or a chronic inflammation, we shall find, even apart from the peculiar development from the adventitious sheaths of the vessels, first observed in our case, only very little support for the same in the investigations hitherto made. First, as to the hypertrophy of the connective tissue, it appears to me to be in the concrete case only an empty name, which gives us no idea of the process by which the disease is supposed to have arisen. We find, in fact, everywhere, that a development of intervening substance in the different forms of connective matter, under both physiological and pathological circumstances, stands in a certain relation to the cells contained therein; but we find in the reports given, no indication that the cells remaining in the connective tissue have emerged from their, under normal circumstances, more passive condition. Such a productive activity proceeding from the cells we might find also in chronic inflammation; and, moreover, as Arning says, the abundant development of elastic filaments,—which, especially in his case, was so prominent, but was found also in a slighter degree in all the others,—is against looking upon the disease as a chronic inflammation, at least such as we have hitherto been accustomed to consider it. Another and much more natural explanation of the connective tissue formation we obtain, according to our case; for, that the lymph-cells accumulated in the sheaths of the vessels may be developed into connective tissue is, in the present state of our knowledge, not surprising; thus we see the colourless blood-corpuscles, which are identical with the lymph-cells, when they have emerged from the circulation of the blood and are come to rest in a thrombus, become developed into connective tissue cells. That elastic filaments may at the same time be developed, is in itself nothing remarkable;[1] and Arning, it appears to me, lays too much stress upon the abundant occurrence of the latter in his case. It is indeed true, that we do not yet know with certainty how the elastic tissue is formed, whether by metamorphosis of the intervening substance of the connective tissue, or by development of processes of the connective tissue cells, or possibly in both modes; but this we know, that the elastic tissue accompanies the formation of connective tissue, and that it stands in near relationship to it: finally, it may, in the case above given, be advanced, that the sheaths surrounding the vessels, which are certainly the matrix of the newly formed connective tissue, contain elastic filaments. The elastic tissue seems, according to our case, to be a later formation, as we found it very abundantly developed in the contracted and hard right breast; in Arning's case, too, the disease had lasted long,—six or seven years.

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[1] With respect to these abscesses frequently occurring in the tropics, Virchow considers it doubtful whether they can be looked upon as secondary; he is rather inclined to believe that erysipelas is produced by them, or that, at all events, they favour its development.

[2] Lehrbuch der patholog. Gewebelehre, 2te Liefer. 1867, p. 255.

Arning, moreover, attaches too great importance to the fact, that the disease was, in his case, almost everywhere limited to the corium, with the exception of the face and neck, where it had existed longest, and where also the subcutaneous connective tissue was attacked. But this is manifestly only a difference in degree, and unessential to the disease. We find precisely the same state of things in elephantiasis, which also may keep more to the surface, or go deeply, quite into the bone.

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[1] We find the same in elephantiasis, as elastic filaments, in some cases, occur in abundance, while in others the fibrillar connective tissue is either predominant or exclusively present.

The reason that the earlier investigators have not observed this peculiar development from the sheaths of the vessels, may, as in elephantiasis, be found in the fact that the disease, in the few cases which have hitherto been investigated, has been in an advanced stage. But that precisely similar circumstances have existed in these can scarcely be doubted; the negative results are explained by our case, and, at all events, cannot overthrow the positive. The case here described may claim to be classed with what has been designated as sclerema, fully as much as any other; and to put it forward as a new form of disease would be as unjustifiable as to set up the two legs with elephantiasis examined by me as specimens of a new form of disease, merely because I have demonstrated a condition in their pathogenesis hitherto overlooked.

Before, however, I leave this section, I have still to mention a very remarkable circumstance, which is peculiar to my case: I mean the metastatic formations we found in the pleura, diaphragm, and liver. We have seen that these had everywhere the same character, and presented an essential similarity to the lymphoid sheaths around the vessels in the skin and subcutaneous connective tissue, as they consisted of adenoid tissue, in which in some places cells, in others interstitial substance, preponderated. So long as sclerema was looked upon as an exclusively local affection, consisting of a chronic inflammation of the skin and subcutaneous connective tissue, such metastases must have appeared to be something singular. Otherwise, I believe, on the contrary, that this condition is in accordance with the theory of the disease above put forward. Virchow,[1] indeed, shows that the difference between Elephantiasis Arabum and Elephantiasis Græcorum, or the proper spedalsked, in cases presenting outward similarity, must be sought in this, that the first is usually a merely local process, while the latter is always a constitutional affection, with many points of eruption; but, nevertheless, he elsewhere says that Elephantiasis Arabum, like erysipelas, in general presupposes a special predisposition. Such a predisposition, in favour of which is also the generally admitted hereditariness of the disease, one is still more inclined to seek in a peculiar change of the whole constitution, than in a particular condition of the skin. We have now, it is true, at least sò far as I know, no decided observations of metastases in elephantiasis; but that metastases may occur in a local process, in which are formed such easily moveable elements as in elephantiasis and sclerema, appears to me to be far from improbable, and is, at all events, much less inexplicable than in the well-established cases of metastases in recurring fibroid (Paget), or of the hard fibro-sarcomas.

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[1] *Loc. cit.*, p. 314.

Metastasis is now, in any case, a well-established fact,—for propagation by contiguity from without is, according to the dissection, impossible,—and must be admitted as such. It shows us, at the same time, as has already been hinted, that in a prognostic point of view the disease ought not to be placed in so favourable a light as has hitherto been done, especially when it occurs in an acute form, with marked infiltration of the affected part, and this because that during the irritative process producing it, in addition to lymph and lymph-cells, other matters are formed, which, in excess, are conveyed to the blood, and produce abnormal admixtures.

Lastly, I shall mention only the development of small, hard tubercles around the hardening peculiar to Plu's case and mine. They seem to have been most strongly marked in my case, and even to have ushered in the disease. In this, too, we have analogy to elephantiasis, which occurs partly in a diffuse form, partly as defined tumours.

That elephantiasis in general may be so considerably modified in its external character, seems to me to be most naturally due to the climatic, social, and hygienic conditions, which prevent the disease from occurring with such intensity as in the tropics, as they weaken the agency which in the last resort produces the disease. That elephantiasis and sclerema in their essence are one, is, I believe, fully established by what has been said; for the differences undeniably existing all appear to be unessential, such as the absence of swelling of the lymphatic glands, usual in sclerema, which, as well as the apyrexial condition, depends upon the less intensity of the local process; further, the absence of thickening of the cuticle and of prolongation of the papillæ, which also may be wanting in elephantiasis (E. lævis). The apparently greatest, but in reality also unessential, deviation is the considerable difference in size: in sclerema, the part collapses gradually as the sclerosis increases; in elephantiasis, it usually attains a colossal magnitude; this depends simply on the fact, that the formation of connective tissue and the source whence it has its origin are much more abundant in elephantiasis, so that the collapse which actually takes place is not perceptible.

If the conditions described in this paper should, as I have no doubt they will, be in essential points confirmed, and, it is to be hoped, extended, by subsequent investigations, the name sclerema also must be changed, so as to indicate the relation of that disease to elephantiasis. I shall with this object in view, propose the term elephantiasis sclerosa. How the sclerema occurring in new-born children (sclerema neonatorum) is related to that here treated of (sclerema adultorum), I must for the present leave undetermined. Sclerema neonatorum seems, according to the reports of the Lying-in Hospital, to be rather rare in Denmark, so that it is difficult to procure materials for investigations, without which the inquiry cannot just now be entered upon.

ARTICLE III.—*Cases of Injury to Bones and Joints in Parturition.* By J. MATTHEWS DUNCAN, M.D.

THE following cases I think worthy of being recorded, on account of their rarity and interest:—

Injury of the Sacro-vertebral Articulation.

Mrs L., æt. 25, had been about three days in labour with her first child, when Dr Paterson of Leith was called to see her. He ascertained that the child's head, which was unusually large, hard, and ossified, had been impacted in the brim of the pelvis for at least twenty-four hours, and that the pelvis was small. He found the pulse quick, and a fetid discharge flowing from the vagina. A small quantity of thick fetid bloody urine was taken from the bladder. The long forceps were used in vain, but not with much persistence, as the child was dead. Craniotomy was then performed, and a very large fœtus brought into the world with considerable difficulty.

On the patient coming under my care in the Royal Infirmary, exactly five weeks after delivery, the following conditions were observed on exposing the parts and examining them, while she was resting on her back. From the middle of the labia majora downwards to where the hips touched the table was an ulcerated excavation, 1½ inch broad, and 3 inches long from before backwards, its deepest part filled with sloughs, among which the urine trickled. The vagina was found crammed with partially separated dirty yellow sloughs.

On the third day of her residence in the ward, and the thirty-seventh after her delivery, she died of pulmonary embolism, under the following circumstances:—She had in the afternoon been cheerful, and conversing with her husband. At 6 P.M. she took porridge for supper, as usual. About twenty minutes thereafter, the nurse observed a blueness of the face. Soon after, the patient said she felt "faintish," and as if she had taken too much supper. Her uneasiness was confined to the region of the stomach. At half-past six, Dr Brunton was called to see her. He found her insensible and shivering, so as to simulate the movements of an epileptic fit. The pulse was small, the breathing laboured, the face pale, the lips bloodless. She could not swallow. The pulse soon became imperceptible, the respirations gasping; and after this state had lasted for about two minutes, death occurred. Dr Brunton believes he was only about five minutes at the bedside before death.

The post-mortem examination was made by Dr Grainger Stewart, on the day after death. The following is derived chiefly from his report of it:—

Heart healthy. On the right pleura there is some lymph effused over portions of the lung, into which hæmorrhage (pulmonary apoplexy) had taken place. Both pulmonary arteries contain large partially decolorized clots. Near the brim of the pelvis, considerable serous effusion into the cellular tissue; most marked about the right common iliac vein, which is obstructed by a partially decolorized clot. The clot extends upwards as far as the vena cava, into which its end projects. The other iliac vein, and its branches, natural. Much serous effusion in the pelvic cellular tissue; no pus. Bladder has the appearances of inflammation; there is a wide vesico-vaginal fistula. On the upper and anterior surface of bladder, on both sides, are sloughed openings communicating with the cellular tissue of the pelvis, each somewhat smaller than a florin. The left ureter is partially obstructed, and on the same side there is hydronephrosis. The promontory of the sacrum anteriorly, and the adjoining fibro-cartilage, are roughened and denuded to the extent of nearly the area of a sixpence. At this part, a lamina of the upper articular surface of the first bone of the sacrum is separated from the rest of the bone, and adherent to the fibro-cartilage. The peritoneum over this part is bluish and discoloured, but entire, and without adhesions. Pelvis has a normal appearance, but its conjugate diameter measures only 3⅜ inches; the bisiliac, 4½.

This case is remarkable on various grounds. The death by embolism is characteristically exemplified; only I wish that the whole symptoms from their commencement had been carefully observed by a physician, as those of the last few minutes of life were. The lesions of the bladder were very extensive, the sloughing process not only affecting the vesico-vaginal septum, but extending to the pelvic cellular tissue. The posterior wall of the vagina was in a sloughy condition. Douglas's space was healthy. But the promontory of the sacrum presented a rare lesion, which is accounted for by the extreme disorganization of the bladder. In every case where the bladder is injured, as in this one, there is the same amount of injurious pressure on the promontory of the sacrum as there is upon the vesico-vaginal septum; but I am not aware that such injurious pressure has ever before been observed to produce permanent injury of the cartilage and bone, as in this case. It is interesting to notice that while the cartilage and bone suffered, the peritoneum was uninjured or entire, both over the sacral promontory and over the upper vaginal and lower part of the uterine wall; these tissues escaping injury, while the subjacent bone and cartilage were destroyed.

Abscess of the Symphysis Pubis.

E. M., æt. 34, unmarried, was delivered, three weeks before I saw her, of her second child. Labour was difficult, and terminated by the use of the forceps. She states that shortly after her confinement retention of urine came on, requiring catheterism for a few days. Latterly she has been passing urine involuntarily. She has not been able to use her limbs in walking since her confinement. It has been ascertained that the forceps were unskilfully applied by a beginner.

Uterus high in pelvis, and pushed backwards towards sacrum. In front of uterus the pelvis is occupied by an elastic hardness. Urethra tender, swollen, entire. Vesico-vaginal septum entire. Along the left side of the whole extent of the urethra is a deep incised-like fissure, ending anteriorly in a cavity, into which the finger can be only partly passed, behind the vestibulum and clitoris. No bare bone can be felt. From the fissure, a probe can be passed three inches behind the symphysis pubis. The symphysis can be felt and heard to move. In a few days after this examination, the finger could be passed into the pubic joint, between the rough denuded pubic bones. Much pus is discharged from the wounds, and in the urine.

It is not necessary to give a detailed history of the progress of this case. The bladder soon recovered its natural functions. The inter-articular cartilages and some pieces of bone were discharged soon after she came under my care. The wound slowly healed up. It was not till this took place, about three months after delivery, that the woman was able to attempt to regain her walking power—which she slowly effected.

In this case, I had no doubt that the injury inflicted by the forceps on the tissues to the left of the urethra, and on the lower border of the symphysis pubis, was the cause of all the woman's subsequent misfortunes.

Injury of Right Frontal (?) Bone of Child.

Mrs C. was delivered by the long forceps of a large child. Traction had been intermittingly used for nearly an hour. The brim of the pelvis was contracted. The mother was well and going about in a few days after delivery. The child also did well. The case was attended by myself and one of my pupils.

I was called to see the child on the fourteenth day of its life, and found a round excavated sore above and in front of the right ear, just where the point of the blade of the forceps had impinged on the skull. From this part there had been discharged a flat round sequestrum of bone, about the size of the flat surface of a split pea.

ARTICLE IV.—*On the Action and Uses of Phosphate of Soda in Small Doses.* By WM. STEPHENSON, M.D., Extra-Physician to the Royal Hospital for Sick Children.

PHOSPHATE OF SODA is described in our books on therapeutics, in an almost stereotyped form, as a mild saline aperient, well adapted for females and children. Its action is such, however, only when given in large doses, and in the present day it is but rarely prescribed. Dr Routh, in his work on "Infant Feeding," recommends it on other grounds. It is an important salt in the animal economy, and one often sadly deficient in the food of children. A further reason for its use he bases on the experiments of Dr Marcet, who first pointed out that the fatty acids are converted into an emulsion by its agency, and that they thus may become more easily assimilated. This is certainly a point deserving of more attention at the hands of medical men than it has received. Further than this, I have not found any special therapeutic action ascribed to it when administered in small doses. That it has such, however, it is the object of this paper to show.

My attention was first drawn to it by seeing it frequently prescribed by my colleague, Dr Ritchie, who uses it according to the recommendations of Dr Routh. The first case I gave it in was for a child, four months old, who was being artificially reared on the bottle, and although healthy in every other respect, was somewhat confined in the bowels, having but one motion each day, copious, but dry and white, exactly like coarse white chalk and curdled milk. A pinch of the phosphate of soda was ordered to be added to each bottle of milk. The result was striking, for the very next day the motions were in every way natural and healthy. I had afterwards several occasions of observing in this child the same action under similar circumstances.

The extensive field for observation afforded me at the Children's Hospital has enabled me further to investigate the matter; and in order to have as few disturbing influences as possible, the remedy was always prescribed alone, the parents being directed to put a pinch of the powder into each article of food the child received: in this way four or five grains were administered each time. The class of cases for which it was ordered were wherever, from an unhealthy character of the motions, the visceral secretions seemed to be abnormal. The first point that became apparent was, that in a great majority of cases where the colour of the stools was abnormal the natural yellow appearance was restored. This was the only appreciable result in many cases; but, at the same time, it was observed that some forms of diarrhœa at once yielded to its action. Several cases of chalky motions, similar to the one narrated, have been treated with the same beneficial results; and now, in this disorder, I have entirely discarded gray powder, and rely on the phosphate alone. Thus far an action on the liver is clearly indicated, which becomes confirmed by the result in the following cases of jaundice:—

Case I.—Wm. P., a robust child, 4 years of age, was brought to the hospital suffering from jaundice. The skin and conjunctiva were of a deep yellow colour. Four months before, he had an attack of scarlatina, and since then he has often complained of pain in the belly, his bowels being more or less deranged, motions sometimes white, never a natural colour. Six days ago he turned sick, and vomited for two days; no purging; great thirst. No bilious-looking matter in the vomit. On the second day of the attack his skin was observed to be yellow, his stools white, and urine high coloured, staining whatever it touched. Ordered 30 gr. phosp. sod. in his food each day. The next morning his motion was slightly yellow, and water much clearer. On presenting himself the following day, a marked improvement in his colour was perceptible, and in a few days he had quite recovered.

CASE II.—The notes of the following case were supplied by Dr Ramsay, my assistant, who attended the child:—

On the 1st of February, I was called to visit a little boy of 2 years of age, whom I found to be suffering from well-pronounced jaundice. The mother believed the jaundice to have been caused by the child's "taking a draw" from his father's tobacco pipe. His skin and conjunctiva were deeply tinged with bile. The urine was of dark porter colour, and the stools were pale and clay-coloured. He was languid and dull, but complained of no local uneasiness. I ordered him to be fed upon bread and milk for a day or two, and to have as much of the phosphate of soda as lay on a threepenny-bit night and morning. At next visit, *i.e.*, on the following day, I found that, having lost the prescription, my patient had had none of the phosphate. He was still more deeply jaundiced than when I first saw him, and the lassitude had increased. Again ordering the phosphate, I left, and did not return till the next day but one. There was marked improvement. The skin and conjunctiva were nearly normal in appearance, the urine was of a natural colour, and the stools had regained the appearance of healthy fæces. I only saw him once subsequently, when I found him in perfect health.

Jaundice in children, however, may pass away of itself; too much weight, therefore, must not be placed on such cases. The improvement in these two instances was certainly immediate upon the administration of the medicine, and may accordingly be taken into consideration along with other cases of a different character where the liver is involved.

In children, we find diarrhœa associated with inaction of the liver, as indicated by the uniform white colour of the motions. The following cases illustrate this condition:—

CASE III.—A boy, 3 years and 4 months old; can neither walk nor speak, and was 14 months before he cut his first tooth. He has been very subject to diarrhœa, but looks well, and is not emaciated, although soft in the flesh. 19*th January.*—Has had diarrhœa for six weeks; motions uncountably frequent, quite watery, pale white, never yellow, and having a strong smell. Portions of egg have been observed to pass through the bowels; vomits occasionally; has a very poor appetite and great thirst. Ordered phosphate of soda.

24*th.*—Bowels have been moved only three times in the twenty-four hours; discharges still watery in the morning, but stiff through the day, slightly yellow, and more natural in appearance. He is taking his food better, and has not so much thirst.

2d February.—Bowels still rather loose in the morning, otherwise natural; he has no thirst; appetite good, and he is rapidly gaining strength.

Case IV.—A girl, 18 months old; weaned at 7 months. *10th April.*—Has had diarrhœa for two months; six or eight motions each day for the last two weeks; they have been uniformly white in colour and very watery; vomits occasionally. Ordered phosphate of soda.

12th.—An hour after taking the powder, the motions became yellow; they are still watery, but only twice in the day. Vomiting continues. To continue the powder, and give pepsine wine after each meal.

17th.—Vomiting stopped; bowels again loose and stools white. The phosphate of soda had not been stopped, but the quantity lessened. Ordered to increase the dose.

19th.—Motions are again healthy in colour, and now of natural consistence.

Case V.—Jane W., aged 16 months; weaned two months ago, and was then strong and healthy. Since that time she has more or less suffered from diarrhœa, but constantly for the last four weeks. The motions are green, white, or yellow, never twice the same, and from five to eight in number each day. Water or tea move the bowels at once, beef-tea and semi-fluid food not so quickly; undigested food sometimes observed in the motions. *15th May.*—Ordered phosphate of soda.

17th—Immediately on going home, the mother gave the child a drink, with some of the powder in it, and the bowels were not moved till three o'clock next morning. Yesterday, they were only moved twice; discharges natural in colour, with a little green matter. Thirst not so great.

22d.—Improvement still going on; bowels move only once in twenty-four hours; appearance natural.

That the liver in these cases was affected cannot be doubted, and the improvement under the medicine is readily explained by its probable effect on that organ, while they go to confirm still further this ascribed action. In the following case, however, the liver was not so faulty, if we are to judge from colour, and accordingly gives rise to other considerations.

Case VI.—Peter B., brought from Leith, aged 3 years. *8th February.*—Has been failing in health since December; apparently strong and healthy before. A sinking of the eyes was first noticed; he became less playful; his bowels loose, and the stomach irritable. The vomiting occurred at least once every day, and generally after taking a drink or fluid nourishment; porridge and potatoes were retained. He is greatly emaciated and pale, and so weak that he cannot stand; his neck even seems unable to support his head. He has an incessant thirst, and passes a large quantity of water. His bowels are moved five or six times in the day, and almost every hour during the night; motions yellow and watery, like pea-soup. Ordered phosphate of soda to be put in his food.

13*th*.—Since taking the powder, the bowels have moved three times in the day (the discharges less in quantity and thicker, of the same yellow colour), and only once during the night. He has not vomited. Thirst not abated. He is eating more, and inclined to take food; can walk about a little.

20*th*.—Four days ago was seized with a severe attack of vomiting, which lasted for ten hours; his thirst was incessant and the drink immediately rejected. Since then he has improved; the bowels are moved once or twice a day, the motions being of the consistence of porridge, and yellow in colour; he is walking about and taking his food well. His thirst, however, is still great, and his water large in quantity, almost devoid of colour, with the specific gravity barely above that of water.

The mother refused to allow the child to be taken into the hospital, and as she had great difficulty in bringing the child regularly so great a distance, she was recommended to place him under medical attendence at home. He was last heard of on 6th March; the bowels continued to be natural, and he was taking his food well, but the thirst and polyuria continued the same.

The effect of the phosphate of soda in this case is undoubted; no other medicine was given, and no alteration in diet was made. The question is, How is its action to be explained? There is some reason to fear the child was suffering from some degeneration of the tissues, for, although much improved and the diarrhœa checked, he was evidently far from well, and the polyuria remained the same. Whether this be so or not, he was certainly suffering from malassimilation of his food, which produced the excessive weakness, from which he recovered whenever the digestive tract regained its tone. The dyspepsia, however, was not purely stomachic, but had much more the character of being duodenal. The affection of the stomach was, I am inclined to regard, principally sympathetic; the vomiting took place not after the heavier articles of diet, such as porridge and potatoes, but generally after a drink or fluid nourishment; and, as we shall afterwards see, it is highly probable that the phosphate of soda does not aid the function of the stomach. Regarding the case, then, as one of duodenal dyspepsia, it only remains for us to consider whether the action of the phosphate we have already traced upon the liver is sufficient to explain the satisfactory result obtained from its use. If this view is advanced as the explanation, then we must ascribe to the remedy a property of being more than an excitant to the liver; for, unlike the preceding cases, there was here no deficiency of bile. It is possible the quality may have been improved, but of this we have no means of judging. It is more consistent, however, with the evidence to regard the other organs which participate in duodenal digestion to have been also deranged; and if so, we have then grounds for believing that the good effect of the phosphate of soda is not confined to the liver alone. In what this effect consists, and in what manner it acts, will perhaps be better left untouched, while we content ourselves with the fact that it does so act beneficially.

One point alone, I would take this opportunity of referring to—a point I have long suspected, but of which we still require more proof, namely, that it is highly probable that the pancreas participates in some forms of diarrhœa in children. That this organ does secrete large quantities of a watery fluid uncharged with the active pancreatic principles when inflamed, or its action otherwise deranged, has been proved by experiments on animals. It has also been shown that water and fluids greatly excite its action. With this observation I would couple the circumstance frequently to be met with in some diarrhœas, as in that of Jane W.—(Case V.)—that the taking of fluids, and especially water, is immediately followed by a fluid motion, but that solid food is not so quickly followed by the same result. The vomiting likewise, in the last case, was generally after taking a drink of water.

The phosphate of soda sometimes acts very beneficially, even when there is every reason to believe that degeneration of tissues has taken place. The following case affords a good example:—

Case VII.—Andrew M., aged 8 years; a very scrofulous child. He has suffered for two years from diseases of the knee and ankle joints, for which the limb was amputated. There is also swelling of one of the wrists, and patches of psoriasis on various parts of the body. Both before and after the operation he suffered greatly from diarrhœa. The motions were exceedingly frequent, copious, fluid, of a very dark colour and strong putrid odour. Alkalies, iron, logwood, lead and opium, were severally tried; but, from his extreme repugnance to medicine, none were persevered in, except the lead and opium pills, which soothed and gave him sleep, but only slightly controlled the diarrhœa. The phosphate of soda was then ordered to be put in his food The very next day an improvement was perceptible; the colour became natural, and soon he had but two motions a day, healthy in character, but always soft in consistence. He shortly afterwards died from extensive degeneration of the kidneys. No post-mortem examination was obtained; but I have no doubt, from the general character of the constitutional affection, that the liver and other organs had undergone degeneration.

The only point which now remains for consideration is, whether the phosphate of soda has any beneficial effect on the function of the stomach. Here a case of failure becomes as instructive as that of success. It was one where I fully expected a good result, and has in it many of the indications for the use of the remedy.

Case VIII.—A boy, about 15 months old; lately weaned. He was greatly emaciated, had a great thirst and ravenous appetite; whenever he saw animal food he would eat it greedily. His bowels were exceedingly loose and frequent by day and by night, the motions being of a very dark colour and strong odour; there was no vomiting. The phosphate was given, with no change, further than a slight improvement in colour. The food was carefully regulated and changed, astringents and iron were tried, but he remained in the same condition for some weeks. Pepsine wine was then ordered, and in a few days a marked change was perceptible; his bowels gradually recovered their tone, and he steadily gained in strength.

Not to multiply cases unnecessarily, I may state that I have frequently observed that where the stomach was weak, and vomiting of food existed, that the latter symptom often persists after the use of the phosphate, even when its beneficial effect on the bowels has been obtained,[1] and that then pepsine is of service in restoring tone to the stomach. I believe, therefore, that the phosphate of soda has no action upon gastric digestion.

Hitherto I have illustrated the action of the remedy in children only; but it is not limited to that age alone. I have obtained good results in cases of adults also, where the action of the liver was faulty. One only would I record here from its remarkable peculiarity, possessing much interest in itself.

CASE IX.—Mrs M., a widow lady of full habit of body, above 45 years of age, has suffered for some years from irritation in the bowels. During that time, and especially the last six months, she has had three and four fluid motions each day, "as if she had taken a dose of salts in the morning." The colour was in general of a dark brown, often perfectly black, and lately has been occasionally white. Her motions, she says, have never been natural or solid during all this time. Her appetite has been moderately good; she has never been jaundiced, and she has no pain in the region of the liver. Daily, and often several times in the day, she has had severe spasmodic pains in her bowels at irregular times, coming on suddenly, and never leaving until her bowels were moved. She has had a constant short cough, and complains of dyspnœa on slight exertion. She was ordered half a teaspoonful of phosphate of soda, three times a day, dissolved in water, and to be taken after meals. At first, by mistake, she took it only in the morning, and without effect. Two days after taking it as ordered, her motions became solid, and of a good yellow colour. Since then she has had but one motion a day—in every respect natural. The spasmodic pain also left, and has since only recurred twice,—probably from some slight indigestion, and, as before, was only relieved by a fluid motion from the bowels. The cough from which she suffered gradually became less troublesome, and has now entirely left, except upon some slight excitement. She continued the phosphate for three weeks, and then discontinued it. Her bowels have now been perfectly regular and natural for two months without any medicine.

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[1] See Case IV.

In the selection of cases I have now given, I trust that I have shown that, in this simple, inexpensive, and easily administered medicine, we have a remedy of much value. It may be given continuously to the youngest and most delicate children with perfect safety, and, in so prescribing it, we are giving a salt of the greatest importance to the general economy when absorbed. It promotes a healthy secretion of bile, and of itself can aid in the assimilation of fatty matters. In regarding the cases where it is indicated, one cannot but be struck by the similarity which exists between its action and that often sought by the administration of gray powder "in alterative doses." As a rule for its prescription, I am in the habit of telling my students, that wherever their minds suggest the ordering of hydrargyrum c. creta as an "alterative," they should try first the phosphate of soda. The advantage of the latter over the former, where it has to be continued for some time, is patent to every one. Where the purgative effect, however, is desired, the former is to be preferred. I hope, therefore, that soon the use of the phosphate will displace in many cases the frequent and too often long-continued use of the dangerous remedy.

The cases for which I now recommend it are chiefly the following:—

In infants who are being artificially reared, and who are liable to frequent derangement of the bowels; also where the phosphatic elements in the food seem deficient, or where articles of food rich in phosphates, such as oatmeal, disagree; where, from the character of the motions, there is a deficient or defective secretion of bile. It is thus of service in cases of chalky stools or white fluid motions. I have also found it of service in many cases of green stools. In diarrhœa, generally, it is more difficult to distinguish the class of cases. In simple diarrhœa, such as we frequently meet with in the summer months, I have not found it of much service alone, although it may be of use when given in combination with other remedies. It is chiefly in that class of cases which are more properly termed duodenal dyspepsia that it is of benefit. Diarrhœa after weaning is generally of this nature, and the cases are often chronic, or of some weeks' standing—the mother generally having exhausted her own and the nearest druggist's resources before applying for advice. It is also of service in some cases where the diarrhœa is due to some general cachexia, as in Case VII.

In adults it has relieved constipation when taken in drachm doses in the morning. I have seen benefit also derived from it where there was a feeling of fulness and sometimes pain in the epigastrium some hours after taking food. In one case of phthisis, the patient said he always felt lighter and better when he took it after his food. I cannot but associate its action with the recorded success derived from the use of the hypophosphite of soda in phthisis; and I am inclined to conjecture that this remedy is to be found beneficial in cases where duodenal dyspepsia is well marked, and that the good results are due to the aid in the assimilation of fatty matter. To theorize, however, is easy, but not always of advantage, and I prefer to leave the matter for further observation.

The doses in which I generally prescribe it are, for children, from 4 to 10 grains in the food, and for adults, from 20 to 40 grains dissolved in water, and taken after meals. I have several times observed, that when given in too small quantities it had not the same effect,—Cases IV. and IX. illustrate this point, so that it is well to begin with a large dose.

A more extended trial of the phosphate of soda in other hands than mine will, in all probability, elicit more exact information as to its action and uses. I have now given the result of two years' investigation, which, though ill defined and crudely shaped, may contribute to redeem one more remedy from the obscurity into which it had fallen, and restore it to the catalogue of useful substances.

ARTICLE V.—*Cases of Obstruction of the Bowels, with Remarks.*

By Dr G. HAMILTON, Falkirk.

SINCE I read the account of cases of ileus by Dr Greig of Dundee, published in the Edinburgh Medical Journal for October 1864, which were treated by injections of air per anum, I have seen three cases of obstruction of the bowels in which this, along with other methods of treatment, was employed.

The first, in a middle-aged woman, was of a mild character, and lasted seven or eight days, with fæcal vomiting during part of the time. I first tried purgatives by the mouth and purgative injections, and these failing, I injected air per anum night and morning, and used opiates to subdue the pain. The case terminated favourably.

The second case occurred also in a middle-aged lady who had been under my care for more than twelve months before her death, with obscure symptoms of irritation connected with the lower part of the gut. I used, at that time, to think they were partly bilious and partly dysenteric. The patient was in Greenock when she was seized with the symptoms of obstruction, which ultimately proved fatal, and was attended by Dr Wallace of that town. I also was summoned to see her, after the obstruction had continued four or five days, and, in conjunction with Dr W., used large fluid and air injections energetically, but without any good effect. As these means proved unavailing, I advised that opiates should be also employed, to subdue, or at least to moderate the intermittent tormina. There was little pain in the abdomen upon pressure, and the pulse was nearly natural. A large pretty solid mass of some kind could be felt when the finger was introduced into the anus; and so lax was the sphincter that, when the patient was placed under the influence of chloroform, Dr W. informed me that he afterwards succeeded in introducing into the rectum his hand for the purpose of exploration. This great laxity of the muscle prevented much of either the enemata or the air injected being retained. The patient died on, I think, the seventh or eighth day from the time when she last got passage in the bowels, and the precise nature of the obstruction was not ascertained, as an examination of the body was not obtained.

The third case was that of a young gentleman, aged 21, extremely robust, and who had, previously to this seizure, enjoyed excellent health. He felt pain in his bowels, and had passage, on the evening of the 13th of last March, and died on the 2d of April, without the bowels having again been evacuated, so that the obstruction extended over about nineteen days. He was in Glasgow when seized, but came home to Falkirk on the evening of the 15th, and I saw him on the morning of the 16th. He had suffered a great deal, he stated, since being seized, from pain in the bowels, of an intermittent twisting character, which was most intense at a spot between the umbilicus and epigastrium, and he had got no sleep during the three previous nights; but I did not find him in the least exhausted, or the pulse materially affected, and the pain upon pressure on any part of the abdomen was trifling. About the spot referred to it was most decided; but still, even there, and all over the abdomen, he could allow me to use great liberties without wincing. The pain he felt seemed to me of a dull rather than of an acute inflammatory kind; and from this characteristic, and its intermittence, taken in conjunction with the pulse remaining quiet, I at once diagnosed the case as one of intestinal obstruction. As he had already taken a good deal of purgative medicine without effect, I immediately gave him thirty drops of the solution of mur. morph., and ordered it to be repeated in three hours. I saw him again in the afternoon, but found he had not been in the least relieved. I then threw up a large stimulating enema composed of salt and water and castor and croton oils, which brought away merely a very small quantity of solid fæces. In the evening I injected a large quantity of air per anum into the bowels, and followed this by another stimulating enema, but without bringing almost anything away, except the injection thrown up. These were twice repeated on the 17th, and castor and croton oils given by the mouth, with the same negative result; and on the 18th he became so distressed, and the case had assumed so serious an aspect, that I telegraphed to Edinburgh for Dr Patrick Heron Watson. On consulting with him, it was agreed that the patient should immediately have one-fourth of a grain of mur. morph. made up into a pill every second or third hour, as might be necessary, and that his strength should be supported by small quantities of nourishing food, and by as moderate an allowance as possible of fluids, and wine or brandy. On March 19 this treatment seemed to have given him very great relief, and it was continued up to the 2d of April, when he died, the morphia pill sometimes being given as often as every hour, or alternated with a laudanum and starch enema. Dr Watson examined the abdomen with great care by palpation, by percussion, and by viewing it in various directions, but was unable to come to any decided conclusion as to the probable seat of the obstruction. The only plausible indication afforded was that furnished by the pain which was complained of between the umbilicus and epigastrium, and this, as will be seen in the subsequent history of the case, became of a very uncertain character. The abdomen generally was distended and tympanitic, and the finger introduced as high as it would reach into the rectum found it quite empty. The stomach also furnished no positive evidence upon which definite conclusions could be based, for what little food was allowed remained, and seemed to be digested, there having been as yet only once or twice vomiting of a few tablespoonfuls of greenish bilious-looking mucus, devoid of any peculiar odour. As far as the stomach was concerned, this state of matters continued up to the time of death; not a trace of anything like fæcal vomiting having at any time occurred. From this time forward also, up to about the fourteenth day, the rectum yielded only negative indications, nothing having been seen in the injections evacuated except what had been thrown up. About the fourteenth or fifteenth day, I first noticed in the fluid which came off about a tablespoonful of white mucus, then a spot of blood in this, and then a decidedly bloody tinge in the fluid, and especially in the mucus evacuated. Latterly the obstruction was so complete, that in all the different injections thrown off, only a few morsels of fæcal matter, a very minute piece of apparently undigested white of egg, and two small bits of tea leaves were observed.

On the 20th March, the comparative ease afforded by the constant doses of morphia continued to a considerable extent, and from this time to the close of the case, I, as well as the patient, had the great advantage of the valuable advice and assistance of Dr Thomson, of H.M. guardship Trafalgar (then lying near Queensferry), and of two young medical gentlemen, all deeply interested friends of the patient and his family, who attended on him night and day with an anxiety, an intelligence, and a loving zeal, which, as nurses and faithful attendants, left nothing more to be desired. To all of us, in a medical point of view, and irrespective of our attachment to our patient as a manly and true-hearted young friend, the case at this period presented features of intense interest. What was the nature of the obstruction, and where was it? Was it invagination, twisting of the intestines, obstruction by a band or loop, or stricture? Nothing as yet had occurred to give definite information on these points. Again, what was to be its course, now that all forcing means tried had failed? Six days had elapsed since its commencement, the patient's pulse and strength were still good, and no symptom of acute local inflammatory action had shown itself. So far all was favourable; but how long would this continue if the obstruction did not yield spontaneously? and if more severe symptoms should set in, would it not be advisable, as a last chance, to perform gastrotomy, seek for the obstruction, and endeavour to remove it? No doubt this probably could be done, if the offending cause were a band or a twisting of the intestine; but how would it be if it were an invagination, the most common of all the pathological conditions found in such cases? Could the gut in such a case at this date be, or would it be fit to be, unravelled? If such views were abandoned, had we simply before us patient waiting till sloughing of the intestine took place, and the hope that it might be in a favourable direction? These and other considerations made us view with great anxiety every change in the symptoms and condition of the patient, the hope for the best, and pursuing the same soothing and expectant practice, with gradually decreasing success, until March 24, when the patient's sufferings became so great that I again requested Dr Watson to see the case along with me. Although the friends at this period thought that such intense suffering could be endured for only a very short time longer, Dr Watson and I were agreed that no symptom had yet occurred of a vitally unfavourable character, and that therefore it seemed not improbable that the issue, whatever that might be, was yet somewhat distant; for the strength was considerable, the patient rising to make water or to get the bed made comfortable; the pulse was of fair quality, and generally ranged from 96 to 104 in the minute; there was no acute tenderness of the abdomen upon pressure, though now a dull pain upon pressure was felt in the left iliac region, in addition to the one complained of below the epigastrium. The chief cause of distress and apprehension, from its exhausting effects being continued, arose from the incessant and agonizing recurrent attacks of tormina, over which the morphia had begun to lose some of its dulling influence; and this was now conjoined with, and was no doubt aggravated by, great distention of the bowels, in great part, as it was thought, of a tympanitic character. Under these circumstances, Dr Watson saw nothing to justify a change of the treatment which was already being pursued, except in so far as that the morphia might be given every hour, if found necessary, that the ingesta should be as small as was consistent with sustaining life, and that chloroform might be used in place of, or in conjunction with, the morphia. Somewhat increased doses of morphia were accordingly given, and these, without the use of chloroform, succeeded in soothing the patient until March 29, when Dr Thomson, who had remained with the patient during the night, called upon me about 7 A.M., before leaving for Queensferry. He stated that the distress of our patient during the night had been intense, and that the distention had been so great that it seemed at times, as the patient had said, as if he would burst. Dr Thomson called upon me especially for the purpose of asking me, whether I did not think relief could be given to the distention by using a needle-sized trochar and canula to allow the air to escape, in something like the same manner as is so often and successfully done in cattle, when they have incautiously been put at once on full feeding on clover. To this suggestion I replied that possibly such practice, with a very small trochar and canula, might prove a safe operation, but that as I had not, that I recollected of, any precedents to guide me, I could not venture to undertake it on my own responsibility. I said, however, that I would immediately communicate with Dr Watson on the subject. I accordingly wrote to him by the first post, mentioning the state of the patient, and the conversation that I had had with Dr Thomson, and asked him, if he approved of the suggestion, to come out and operate; or, I said, consult with Sir James Simpson on this point, and on the general management of the case, and let me know the result. Dr Watson most kindly and at once followed the latter course, and saw and consulted with Sir James, and telegraphed to me, as the result—"Do not puncture; use chloroform, and also apply belladonna ointment to the abdomen." By the time this telegram arrived the tympanitic distention appeared somewhat to have abated, and the chloroform had been given pretty freely, and had acted so soothingly, in conjunction with the morphia, still given every second hour, that these alone were trusted to, or seemed necessary, up to the night of April 1, when acute inflammatory symptoms set in. The pulse then became bounding and very rapid, and the abdomen very tender upon pressure, especially in the portions which had previously been complained of. These were situated, as I have already mentioned, below the epigastric and in the left iliac regions. To these were added, in the few last days of the patient's life, two other localities which were similarly complained of, viz., the left hypochondriac and the right iliac regions, in which latter situation, or between it and the umbilicus, I could distinctly feel a doughy, pultaceous mass of some kind. On the 2d of April the sufferings of this afflicted patient (a most distressing case to all who were concerned with it), were brought to a termination in a way which, it will presently be seen, was as peculiar as were some of the other features which marked the history and course of the disease.

On 3d April, I made an examination of the body, in which I was assisted by Dr Thomson and his son. Before mentioning the pathological appearances which this examination revealed, I will first advert to two other points to which our attention was directed. The first was the startling fact, when we came to uncover the body, that the whole of the bed-clothes were steeped in blood, which had escaped from the mouth after death, but which had not previousy been observed. Its amount was so great, that I think it must have amounted to something like ten or twelve ounces. It formed a complete puzzle to us, where this blood had come from, and what was the cause of it. I naturally concluded that, on opening the abdomen, or at least the stomach, the enigma would be solved. But no; nothing had been ruptured in the abdomen, and the stomach contained only a greenish mucous fluid like what had been vomited during life. At the time of the examination of the body, and for some time afterwards, this great effusion of blood, evidently from the thorax (which a promise to mutilate the body as little as possible prevented us from opening), remained to me an isolated fact, which I was unable to connect with the other parts of the case. In a conversation, however, which I have since had with the mother of the patient, it seems to me that I have probably had this difficulty removed. She stated to me (and without having had the slightest idea of the significance of the statement) that in the last agonies of her dying son, he made one extraordinary effort to overcome the obstruction in the bowels, as if he had said, "I must have them moved, or I will die in making the effort;" that a beef-tea enema came off; and that she said to herself, Oh! has the obstruction at last given way, and will all now be right? All was not right, for death immediately followed; and it now seems to me that, in making this last and great effort, a bloodvessel in the chest had been ruptured, and that this very singularly had been the immediate cause of death. The second circumstance to which I have to advert is this, that before opening the body, I used a hydrocele trochar and canula for the purpose of seeing whether with this the air could be easily allowed an escape from the intestines. The instrument was made to pierce the abdominal parietes and the intestine, the former immediately under the umbilicus, the latter about midway between the commencement of the jejunum and the lower end of the ilium, with the effect of at once allowing the escape of a very large quantity of air, which relaxed the tension of the abdomen. The instrument was kept in the intestine until the abdomen was opened, and on withdrawing it, a small quantity of whitish mucus was found on the serous surface, where the opening had been made. The pathological appearances which an examination of the abdominal contents presented were the following:—On passing the fingers along the intestines from the rectum upwards, the obstructing cause was immediately found to be a contracted portion of the colon near its lowest extremity. The whole of the colon above this was enormously distended with air, fæces, and fluid, especially the last; while most of the same part of the intestines showed traces of acute inflammation, this being especially intense, and passing almost into gangrene, on the under part of the left side of the transverse curvature, just where it joins with the sigmoid flexure. On lifting up this portion of the bowel it gave way, and allowed its contents to escape. A large quantity of soft fæces lay near the caput cæcum coli, and this evidently corresponded with the pultaceous mass which has been mentioned as having been felt during life near the right iliac region. The small intestines contained mostly air, with only a small quantity of watery fluid, and the stomach, as has already been stated, contained only (besides air) a very small quantity of green mucous fluid, similar to that which had at times been vomited during the patient's illness. The contracted portion of the intestine, when taken out of the abdomen and examined, was found to be pretty healthy on its serous surface, and the intestine below it was also healthy. The mucous surface of the part above the contraction was injected; but both it and the corresponding serous membrane were firm and comparatively uninjured by the inflammatory action that had existed. As I have already said, it was higher up the large gut, and running along the under portion of the transverse curvature, that the marks and effects of inflammation were most decided. When cut open, the contracted portion of intestine was found to be thickened and indurated in a part of its circumference, and the mucous membrane was here also found in a state of ulceration, and covered with protruding granulations.

The important circumstance to be noted connected with this contraction is, that the ulceration and induration were on one part of the circumference of the bowel, and bound it pretty tightly down to the solid parts with which it was connected, while the healthier mucous membrane on the opposite portion of its circumference had become elongated, and apparently could overlap the opening left in the contracted passage.

In viewing the history of this case, and looking at the pathological conditions found after death, there are some circumstances of both practical and theoretical interest in connection with which I will make a few remarks.

As giving a key explanatory of the whole phenomena that in succession developed themselves, I will observe that the obstruction does not appear to me to have been (as the first appearance of the parts seemed to suggest) of a strictural, but was in reality rather of a valvular character,—opening only in the wrong direction, viz., upwards. Both the appearance of the parts and the history of the case seem to be in unison with this view; for neither did the mere contraction of the bowel appear to me at all sufficient to account for the sudden and complete stoppage to the passage of its contents downwards that took place,—a stoppage so entire that, as has been mentioned, after the rectum had been cleared out, literally almost nothing else than the ingredients of the enemata could be found in the evacuations,—nor does it seem possible to reconcile the idea of stricture with the facts that none of the usual symptoms of strictured gut had ever been complained of by the patient, and also that the diseased portion of mucous membrane was very small, and appeared (if malignant) in only an early stage of what, had life been prolonged, might have been its development. Assuming, then, that the action of the diseased parts was really valvular, we have here an instance in which obstruction in the bowel, from there being few interfering causes, probably ran nearly what may be called its natural course,—death occurring rather as a remote result than as an immediate effect of the obstruction. In accordance with this view, we see a sufficient reason, I think, why acute inflammatory symptoms were so long delayed, coming on, in fact, only on the eighteenth day of the attack; and we notice also that the parts found to be most inflamed were not those in contiguity with the constricted portion of intestine, but were considerably removed from it. There are other circumstances worthy of being noted.

1*st*, The dull pains felt during life in various parts of the abdomen, though then rather perplexing, having been first near the epigastrium, then in the left iliac region, then higher up, and at last in the right iliac region also, are now seen to be entirely consistent with the fact that these different sites are all in the course of the large intestine, and that this portion of the bowels was gradually being more and more distended, probably from below as well as from above, until it was absolutely on the point of bursting—and, indeed, I have no doubt would literally have burst had the patient survived only a very short time longer. I have said that the bowels probably became distended from below as well as from above (the valve opening upwards), and that therefore all our well-intentioned efforts in giving large enemata, and in forcing up air, only tended to increase our patient's sufferings, and to accelerate the fatal termination.

The *second* circumstance I have to notice in the progress of this case was the want of the slightest approach to fæcal vomiting during its entire course. During life, when canvassing with a medical friend the probable portion of intestine involved, I had ventured to say that, from the circumstance referred to, it would likely be found towards its lower extremity, or, at least, that it ought to be so, if Dr Brinton's theory as to the cause of fæcal vomiting were correct.[1] As far as a single case can go, this one certainly seems to lend the theory propounded strong support.

3*d*, An inspection of the obstructing parts *in situ* at once showed that it was impossible to discover these by any examination through the abdominal parietes. Neither was there in this case acute pain or swelling, as is often seen in invagination, to guide us in a diagnosis. An examination per anum might no doubt have yielded better results had Dr O'Beirne's tube or a bougie been used, or had the sphincter ani allowed, as in my other patient, the introduction of the hand for exploration. The parts in this case, however, were particularly rigid, and allowed me to succeed in examining only the rectum. I purposely, in this instance, abstained from using the long gum-elastic tube for throwing up enemata, from a want of confidence in its doing any good in such cases (for, independently of the difficulty of introducing it, adverted to by Dr Brinton, the fluid thus injected, it appears to me, usually at once gravitates towards the rectum), and I therefore preferred elevating the nates of the patient as a means of causing the fluid to reach well up into the large gut. Had the diagnosis been more clear, and had I succeeded in passing a gum-elastic tube through the strictured portion of gut, temporary relief, at least, might certainly have been given by allowing the contents of the bowel in this way to escape. There would, however, have also been the danger, in manipulating with a tube so high up in the gut, of passing it through the coats of the bowel instead of through the obstructed passage.

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[1] See on this point the admirable posthumous work on Intestinal Obstruction by Dr Brinton.

In the treatment of these three cases, a combination of the forcing and soothing treatment was at the commencement employed. Of the former, I can say no more than that, in the first case, my impression is, that it did no harm, and certainly the obstruction yielded on about the eighth day; in the second case, it was unsuccessful; and, in the third, it certainly did harm. Of the solace and advantage arising from the free use of morphia and chloroform, as such cases advance, and all forcing measures must necessarily be abandoned, I cannot speak too highly. On these, or such as these, our chief reliance must clearly then be placed, not only in relieving the patient's sufferings, but in allowing nature, as it were, to have fair play in attempting to do what we have been unable to effect.

After copious enemata had been used in the first case, I tried the injection of air per anum; and, as this was the first time I had employed this means of cure, which Dr Greig of Dundee and others have spoken of so favourably, I felt great interest in watching its effects. All I can say regarding it is, that I injected the air night and morning, each time until the patient began to feel very uneasy from the distention, but that this uneasiness was only temporary in its duration. As the disease yielded in this instance, I was inclined to think very favourably of this mode of cure. The laxity of the sphincter ani in the second case prevented its proper application, as did also the nature of the obstruction in the third one. Whether in invaginations, especially, by far the most common of all the causes of obstruction, it will be found in the hands of others as useful as it appears to have been in those of Dr Greig, remains one of the very interesting questions which has to be determined in these affections.[1] One thing, however, appears certain, namely, that it can be used with advantage, or even safety, only at the commencement of the attack. The local inflammation, and the rapid adhesions that frequently occur, very soon render it inapplicable. No doubt, however, the rapidity with which the disease will run its course depends much upon the greater or less intensity of the exciting cause; and hence much must be determined by the judgment of the practitioner in each individual case.

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[1] With the simple apparatus I used, viz., a good pair of bellows and a tube with a valve in it, I have satisfied myself on the dead body that air ascends very readily into the small intestines.

The same remarks apply with even more force to the still more serious question whether, in certain obstructions, gastrotomy will even be considered justifiable as a last resource, with even the clearest diagnostic results which long experience and close examination are likely to yield us. Our experience in ovariotomy has certainly shown that making an opening into the abdomen is by no means, *per se*, the very serious operation it was at one time supposed to be; but then the intestines in such operations are generally found and left in a healthy condition. In obstructions of the bowels, on the contrary, the conditions are very different. Here gastrotomy, I suppose, would not be considered justifiable by any one, except as *a last resource;* and the serious matter for consideration comes to be, in what condition would the bowels *then* be found. If our diagnosis could be made so clear that, as in hernia, the operation could be undertaken at an early stage, or were we, for example, operating upon the lower animals instead of upon the human subject, it is quite possible, I think, that operating at an early period might be found, upon the whole, the most successful practice that could be pursued. In many invaginations, or where a band or cord forms a loop through which the intestine had passed, and in a number of other cases, there seems little reason to doubt that an operation might be successful; but, in private practice at least, the risks and difficulties connected with such an operation—an operation which, to have moderate chances of success, must be performed early, and which yet the feelings of friends will allow to be undertaken only as a last resource—will most likely prevent even the boldest and most skilful from venturing on it. One difficulty which presented itself in the third case I have recorded seems alone to be sufficiently formidable, when present, even were other circumstances deemed favourable. The tympanitic distention was at an early stage so great that, had the abdomen been opened, it could not again have been closed while the bowels remained in that condition. Would puncturing them, in these circumstances, supposing the abdomen to have been opened, so as to let a portion of the air escape, be an operation attended with any great additional hazard? or would puncturing the intestine through the abdominal parietes be in any circumstances a justifiable operation? These are questions to which, I suspect, only very problematical answers can at present be given. As to the efficacy of such a procedure as the latter, in at least allowing the contained air to escape freely and extensively, I entertain no doubt, from what took place when I pierced the intestine with the hydrocele trocar and canula, as I have already mentioned. The risk attendant upon it is another matter, even with the needle-like instruments that are now to be had.

INFORMATION REGARDING MEDICAL EDUCATION AND EXAMINATIONS.

THE following are the Recommendations of the General Medical Council on the subject of Medical Education and Examinations:—

I. PRELIMINARY EXAMINATION.

1. That testimonials of proficiency granted by the national educational bodies according to the subjoined list may be accepted, the Council reserving the right to add to, or take from, the list.

1. A Degree in Arts of any University of the United Kingdom or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council.
2. Oxford Responsions or Moderations.
3. Cambridge Previous Examinations.
4. Matriculation Examination of the University of London.
5. Oxford Middle Class Examinations (Senior).
6. Cambridge Middle Class Examinations (Senior).
7. Durham Middle Class Examinations (Senior).
8. Durham Examinations for Students in Arts in their second and first years.
9. Durham Registration Examination for Medical Students.
10. Dublin University Entrance Examination.
11. Queen's University, Ireland, two years' Arts Course for the Diploma of Licentiate in Arts.
    12. Preliminary Examinations at the end of A.B. Course.
    13. Middle Class Examinations.
    14. Matriculation Examinations.
15. First Class Certificate of the College of Preceptors.
16. "Testamur" granted by Codrington College, Barbadoes.
17. Degree of Associate of Arts granted by the Tasmanian Council of Education, with a certificate that the Student has been examined in Latin and Mathematics.
18. Matriculation Examination of M'Gill University, Montreal.

2. That students who cannot produce any of the testimonials referred to in the first recommendation be required to pass an examination in Arts, established by any of the bodies named in Schedule (A) to the Medical Acts, and approved by the General Medical Council.

3. That the examination in general education be eventually left entirely to the Examining Boards of the national educational bodies recognised by the Medical Council.

4. That no certificate of proficiency in general education, which does not affirm the proficiency of the candidate in Latin, be deemed a sufficient proof of preliminary education previous to the commencement of professional studies.

5. That the various educational and licensing bodies be requested to transmit to the Registrar of the General Council, returns, embodying any alterations which they may from time to time introduce into their courses of general study and examinations, which qualify for the registration of medical students; and hat a copy of such returns be sent by the Registrar, as soon as convenient, to each member of the General Council.

N.B.—The following recommendations, printed in italics, were passed by the General Medical Council, May 25, 1866, but are not intended to come into operation till October 1, 1868.

1. *That the following subjects constitute a minimum to be required of candidates for preliminary examination, viz.:—*

Compulsory Subjects—

1. *English Language, including Grammar and Composition.*[*]
2. *Arithmetic, including Vulgar and Decimal Fractions; Algebra, including Simple Equations.*
3. *Geometry: First Two Books of Euclid.*
4. *Latin, including Translation and Grammar.*

And 5. *One of the following*

Optional Subjects—

1. *Greek. After the year* 1869, *Greek shall be one of the compulsory subjects.*
2. *French.*
3. *German.*
4. *Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.*

2. *That certificates of proficiency, to be received from all bodies legally authorized to examine in general education in Great Britain and Ireland, and from the several licensing bodies enumerated in Schedule (A) to the Medical Act in Great Britain and Ireland, shall bear evidence that the candidates have been examined and approved in at least the above subjects.*

3. *That in the case of certificates received from similar educational and licensing bodies in other parts of the empire and foreign countries, satisfactory evidence shall be given to the Medical Council, or Branch Councils, that such certificates are equivalent to those recognised in the United Kingdom.*

4. *That it shall be delegated to the Executive Committee to prepare annually and lay before the Council for recognition a list of examining bodies, whose examinations shall fulfil the conditions of the Medical Council as regards preliminary education.*

5. *That after* 1868, *all examinations shall be removed from the list of those recognised which do not in all respects come up to the minimum which the Council laid down in* 1866. (*June* 1867).

II. Registration of Medical Students.

1. Every medical student shall be registered in the manner prescribed by the General Medical Council.

2. No medical student shall be registered until he has passed a preliminary examination, as required by the General Medical Council.

3. The commencement of the course of professional study recognised by any of the qualifying bodies, shall not be reckoned as dating earlier than fifteen days before the date of registration.

4. The registration of medical students shall be placed under the charge of the Branch Registrars.

5. Each of the Branch Registrars shall keep a Register of Medical Students

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[*] The General Medical Council will not consider any examination in English sufficient that does not fully test the ability of the candidate—1*st*, To write a few sentences in correct English on a given theme, attention being paid to spelling and punctuation, as well as to composition; 2*d*, to write a portion of an English author to dictation; 3*d*, to explain the grammatical construction of one or two sentences; 4*th*, to point out the grammatical errors in a sentence ungrammatically composed, and to explain their nature; 5*th*, to give the derivation and definition of a few English words in common use. (June 1867).

in a form, containing the date of registration, name, preliminary examination, with the date thereof, and place of medical study.

6. Every person desirous of being registered as a medical student shall apply to the Branch Registrar of the division of the United Kingdom in which he is residing, according to a form, which may be had on application to the several qualifying bodies, medical schools, and hospitals; and shall produce or forward to the Branch Registrar a certificate of his having passed a preliminary examination, as required by the General Medical Council, and a statement of his place of medical study.

7. The Branch Registrar shall enter the applicant's name and other particulars in the Students' Register, and shall give him a certificate of such registration.

8. Each of the Branch Registrars shall supply to the several qualifying bodies, medical schools, and hospitals, in that part of the United Kingdom of which he is Registrar, a sufficient number of blank forms of application for the registration of medical students.

9. The several Branch Councils shall have power to admit special exceptions to the foregoing regulations as to registration, for reasons which shall appear to them satisfactory.

10. A copy of the Register of Medical Students, prepared by each of the Branch Registrars, shall be transmitted, on or before the 31st December in each year, to the Registrar of the General Council, who shall, as soon as possible thereafter, prepare and print, under the direction of the Executive Committee, an alphabetical list of all students registered in the preceding year, and supply copies of such authorized list to each of the bodies enumerated in Schedule (A) to the Medical Acts, and through the Branch Registrars to the several medical schools and hospitals.

11. The several qualifying bodies are recommended not to admit, after October 1870, to the final examination for a qualification under the Medical Acts, any candidate (not exempted from registration) whose name had not been entered in the Medical Students' Register at least four years previously.

In the case of candidates from other than schools of the United Kingdom, the Branch Councils shall have power to admit exceptions to this recommendation.

⁂ The Branch Councils are desired to take means to make these regulations known to the medical students at the various medical schools.

III. AGE FOR LICENCE TO PRACTISE.

1. That the age of twenty-one be the earliest age at which a candidate for any professional Licence shall be admitted to his final examination; that the age shall, in all instances, be duly certified; and that a return of any exceptions to this recommendation allowed by the licensing bodies, together with the reasons for such exceptions, be transmitted to the Branch Council of that part of the United Kingdom in which they have been granted.

2. That no Licence be obtained at an earlier period than after the expiration of forty-eight months subsequent to the registration of the candidate as a medical student.

IV. PROFESSIONAL EDUCATION.

1. That the course of professional study required for a Licence shall comprehend attendance during not less than four winter sessions, or three winter and two summer sessions, at a school recognised by any of the licensing bodies mentioned in Schedule (A) to the Medical Act.

2. That it be recommended to the several licensing bodies that the courses of instruction required by them be framed in such a manner as to secure a due share of attention, both to preparatory branches and to those more strictly connected with the practice of Medicine and Surgery; and that it be suggested accordingly to these bodies, that their regulations should be such as to prevent attendance upon lectures from interfering with hospital and clinical study.

3. That the Council will view with approbation any encouragement held out by the licensing bodies to students to prosecute the study of the natural sciences before they engage in studies of a strictly professional character.

V. Professional Examination.

1. That those licensing bodies which have not already done so, be requested to furnish a statement of the dates of their examinations and of the modes in which such examinations are conducted, whether by written, oral, or practical examination, and of the length of time a candidate is under examination in each or all of these ways; and that the Registrar transmit these reports to the members of the Council, in order that they may be taken into consideration at the next meeting of the several Branch Councils.

2. That the professional examination for any Licence be divided into two parts; the first embracing the primary or fundamental branches directly connected with the practice of Medicine and Surgery; that the former be not undergone till after the close of the winter session of the second year of professional study; and the latter or final examination, not till after the close of the prescribed period of professional study.

3. That the examination in Physics, Botany, and Natural History may be undergone at an earlier period than the first professional examination.

4. That the professional examinations be conducted both in writing and orally; and that they be practical in all branches in which they admit of being so.

5. That the professional examinations be held by the several licensing bodies, except in special cases, at stated periods, to be publicly notified.

6. That returns from the licensing bodies in Schedule (A) be made annually, on the 1st of January, to the General Medical Council, stating the number and names of the candidates who have passed their first as well as their second examinations, and the number of those who have been rejected at the first and second examinations respectively; and that the Registrar forward a sufficient number of forms, with a notice for their being returned in due time.

7. That it is not desirable that any University of the United Kingdom should confer any degree in Medicine or Surgery, whether that of bachelor, doctor, or master, upon candidates who have not graduated in Arts, or passed all the examinations required for the Bachelorship in Arts, or the examinations equivalent to those required for a degree in Arts.

The Council at their last meeting (June 1867) adopted the following Report:—The Committee appointed to consider and report what are the subjects without a knowledge of which no candidate should be allowed to obtain a qualification entitling him to be registered? beg to submit the following list of subjects:—1. Anatomy; 2. General Anatomy; 3. Physiology; 4. Chemistry; 5. Materia Medica; 6. Practical Pharmacy; 7. Medicine; 8. Surgery; 9. Midwifery; 10. Forensic Medicine. The Committee in enumerating the subjects, a knowledge of which should constitute a minimum of the aquirements possessed by every registered medical practitioner, desire to add the following explanatory remarks:—"Chemistry" should include a knowledge of the principles of Chemistry and of those details of the science which bear on the study of Medicine; "Medicine and Surgery" should include a knowledge of Systematic and Clinical Medicine and Surgery, and also of Morbid Anatomy.

VI. Supervision of Examinations.

1. That the visitations of the Examinations, preliminary as well as professional, of the qualifying bodies, by the Branch Councils, or such of their members as they may depute, be continued during the ensuing year.

2. That the reports of the Visiters shall apply to every part of the Examinations of each body, and shall include a statement of the facts observed and of the opinions of the Visiters as to the efficiency of the Examinations; as also such remarks and suggestions on defects in them as circumstances may indicate.

REMARKS ON MEDICAL STUDY.

Since last year, there are few material changes to notice, either in the regulations, the course of study, or the examinations. The improvements introduced of late years have been confirmed, and in some degree extended. It is evident that they are being carried out in earnest; and although many deficiencies still exist, it is gratifying to observe that the different Boards exhibit a conspicuous anxiety that the conditions on which candidates obtain their qualification shall not fall short of the standard laid down by the Medical Council, and generally recognised as requisite for an educated and liberal profession.

In regard to the *preliminary examination*, which is now imperative before commencing the study of Medicine, it will be observed that the Medical Council are disposed to lay much stress upon a sound knowledge of English. No examination is to be considered sufficient which does not fully test the ability of the candidate at least in orthography and composition. It is now generally admitted that a greater amount of attention ought to be paid to our own language in the education of youth than has been the case for many years past. The deficiencies in this respect are well known to those who have taken any part in examinations, preliminary or professional. We have no doubt that a great improvement is easily attainable; and we strongly advise all aspirants to the medical profession, to cultivate a knowledge, as accurate as possible, of their native tongue. The possession of this knowledge forms the basis of a sound education, and will prove eminently useful to the student at every stage of his future career; the want of it is a continual obstacle and hindrance, retarding his progress, and retaining him in an inferior position. Here, accordingly, the Examining Boards require to exercise a careful supervision in the interest both of the candidates themselves and of the profession. The other compulsory subjects, arithmetic, geometry, and Latin need no remark: and the optional subjects, Greek, French, German, and Natural Philosophy, remain the same as before; after the year 1869, however, Greek will become one of the compulsory subjects. Before quitting the topic of preliminary study, we shall add only one piece of counsel, addressed particulary to those students who wish to attain a high place in their profession. We would recommend them either to take a degree in Arts, or, in addition to their literary education, to study Natural Philosophy and Chemistry, Natural History, or Botany, before commencing the medical curriculum. The amount of previous training in philosophy or science, besides the superior mental culture, gives a real advantage in the study of Medicine, especially in the higher departments; and, moreover, the period of four years allotted for medical study is at the present day scarcely sufficient, unless some of the accessory sciences have been previously mastered.

After passing his preliminary examination, the next step for the student is to get his name entered immediately in the Medical *Register*. The serious consequences of any delay or neglect to do so are sufficiently apparent from a perusal of the regulations of the Medical Council on the subject, which have been given above.

On the subject of *professional education*, we need only observe that the tendency is to render it at once more comprehensive and more thorough. Several special departments of great importance, as diseases of the eye, ear, larynx, etc., are receiving increased attention; and the rapid advances in medical science have necessitated a more minute and accurate acquaintance with the phenomena of health and of disease. Practical teaching has been introduced to supplement the information conveyed in lectures. As we have already hinted, four years will be found short enough for the acquisition of all the necessary knowledge. We would accordingly recommend students to set to work at once, without loss of time, at the very commencement of their curriculum; and we would further advise them to take advantage of the comparative leisure of the summer sessions in order to complete their reading and private study, and also to acquire the practical information for which the number of classes attended during the winter session leaves often very little time or opportunity. When the student is fortunate enough to have more time at his disposal, we are disposed to think that five years, instead of four, may be most profitably spent in medical study before taking a qualification or degree.

In correspondence with the mode of teaching, the *Examinations*, in addition to the written and oral questions, now include trials of a practical kind. The changes in this respect are being introduced gradually, but the candidate will require in future to prepare himself to perform the ordinary manipulations and experiments, dissections, operations, inspection with the microscope, etc., in connexion with the various sciences which form the subject of examination. In this respect, the most important change recently made is the introduction of *Clinical Examinations* in Medicine and Surgery. These are now being adopted by the Universities, Colleges, and other Boards. We entirely approve of them, not only on account of the excellent test they afford of real knowledge, but also because they will effectually promote clinical study on the part of students. In Scotland, clinical study has long been specially insisted on; and students have generally applied themselves to it with a considerable amount of attention. This will no doubt increase; and the improvement will also, we trust, be conspicuous in the English schools, from which complaints are often made of the indifference of students to their clinical work, which is undoubtedly, in relation to practical usefulness, the most important of all.

Before concluding, we desire to add some words of encouragement. The various changes introduced, and especially the increased amount of study and of proficiency required by the Examining Boards, are apt to exert a deterring effect upon young men desirous of entering the profession. As we have on former occasions remarked, the number of students will probably be diminished in consequence of them. And indeed, although we are of opinion that the changes introduced are excellent, yet it must be admitted that the extent and amount of labour which a strict and conscientious following out of the present curricula, preliminary and professional, would entail, are excessive; that the field is too vast to admit of thoroughness and accuracy, and that consequently something requires to be done to relieve students, by limiting the amount of study in the different departments so as to separate essential from superfluous information. But, meanwhile, students may be assured that the guidance and advice of their teachers will obviate any present difficulties; and, on the other hand, that the opportunities and the instruction which they now enjoy are such as to qualify them, in a superior manner, for the practice of their profession. The more practical character of the teaching and of the examinations, instead of increasing their difficulty, actually renders them more easy to all who have a real knowledge of their work. And we believe that students themselves will not be slow to acknowledge the advantages and the propriety of these examinations. That the idle and incompetent will now have little chance of passing is quite true; but we feel assured that those most worthy of entering the profession will be attracted rather than repelled by the changes we have noticed.

We have left ourselves no space to dwell at length on the rules to be observed by the student himself for the successful guidance of his own career. Nor is it necessary, as the various introductory addresses are sufficiently explicit on the subject. We shall conclude with only two recommendations. First, that the student should, at the commencement of each session, lay down a plan of study, and strictly adhere to it. This plan should secure a proper distribution and limitation of the hours of work, with sufficient intervals of healthful recreation. So much attention is now commonly paid to hygienic rules, that we need not do more than allude to this point. Secondly, we strongly recommend the student, after his first year, to join one of the debating societies which exist at most medical schools, and of which the Royal Medical Society of Edinburgh, with its spacious rooms and large library, is an excellent example. The mental vigour derived from independent thought and free discussion, and the genial influences of friendship for which these societies afford opportunity, are of great value in the education of the medical student, and contribute, in no small degree, to a successful career in after life.

The following pages contain an abstract of the regulations of the various licensing bodies. We have thought it unnecessary to print the requirements of the different Boards under the head of Preliminary Examinations. These requirements do not vary very widely, and the most recent information can at all times be obtained by addressing the Secretaries of the different bodies. Generally speaking, there are from two to four periods in the course of the year at which these examinations are held.

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.	Dissections.	Chemistry.	Practical Chemistry.	Materia Medica.	Physiology or Institutes of Medicine.	Surgery.	Practice of Medicine.	Midwifery.	Medical Jurisprudence.	Pathology or Morbid Anatomy.	Botany.	Natural History.	Practical Pharmacy.	Clinical Surgery.	Clinical Medicine.	Hospital Attendance.	Practical Midwifery.	Dispensary or Out-door Practice.	Vaccination.
	Years.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	
Edinburgh University, M.B. & C.M.,	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	3 mo., or 6 cas.	6	
University of Glasgow, M.B. & C.M.,	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	6	6	24	do.	6	
University of Aberdeen, M.B. & C.M.,	21	12	6	6	3	6	6	6	6	6	3		3		3	6	6	24	do.	6	
University of St Andrews, M.D.,	22	12	12	6	3	3	6	6	6	3	3		3	3		6	6	24			
London University, M.B.,	21	6	15	6	1 crs	1 crs	6	6	6	1 crs	1 crs				1 crs	2 yrs.	2 yrs.	4 yrs.	20 cas.	6	
University of Durham, M.B. & M.D.																					
Dublin University, M.B.,		6		6	3 ms	6	6	6	6	6	3		3			9	9	18			
" " Surgical Diploma,		18	18	6	3	6	18	18	6	6	3		3			27	27	27			
The Queen's University of Ireland, M.D.,		12	12	6	3	6	12	6	6	6	3		3	3	3 mos.	12	12	24	3 mo.		
Royal College of Physicians, London,	21	12	12	6	3	3	12	6	12	3	3	6	3		3		9	24	20 cas.		
Royal College of Physicians, Edinburgh,	21	6	6	6	3	3	6	6	6	3	3	3	3		3	3	6	24	6cases		
King and Queen's Col. of Phys. Ireland,	21	6	12	6	6	6	6	6	6	6	6		6			6	21	27	6 mo.		
Royal College of Surgeons, London,*	21	12	12	6		3	12*	12	6	3					3	27*	9*	33			Cert.
Royal College of Surgeons, Dublin,	21	18	18	6	6	3	18	18	6	3	3					18	9	27			
Royal College of Surgeons, Edinburgh,	21	12	12	6	3	3	3	6 or 12	6	3	3	3			3	6 or 12	6	24	6 cas.	6	Cert.
Faculty of Phys. and Surgeons, Glasgow,	21	12	12	6	3	3	3	6 or 12	6	3	3				3	6 or 12	6	24	6 cas.		
For Double Qualification by Royal College of Phys. and Surg. of Edinburgh,	21	12	12	6	3	3	3	6 or 12	6 or 12	3	3	3	3		3	6 or 12	6 or 12	24	6 cas.	6	Cert.
For Double Qualification by Royal College Phys. Edinburgh, and Faculty of Physicians and Surgeons of Glasgow,	21	12	12	6	3	3	6	6 or 12	6	3	3	3			3	6 or 12	12	24	6 cas.		
Apothecaries' Hall, England,	21	12	6	6	3	3	6		12	3	3	6	3		Appr.		27	27	20 cas.		9 mo.
" " Ireland,	21	6	12	6	3	3	6	6	6	6	3		3		Appr.	9	18	27	20 cas.		

English Poor-Law Board.—Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licences granted by competent legal authority in England, Scotland, or Ireland.

Information respecting exceptions to these regulations under various circumstances, and other details as to the order in which, according to some Licensing Bodies, the courses should be taken out, etc., must be obtained by consulting the published Charts of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its Regulations.

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* Students from the Schools of Scotland are admitted to examination at the Royal College of Surgeons of England, if they have followed the course of study required by the regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Physiology, six months Clinical Surgery, six months Clinical Medicinė, and twenty-four months Hospital.

MEDICAL SCHOOLS OF SCOTLAND, 1867–68.

WINTER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SURGEONS' HALL, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S UNIVERSITY, GLASGOW.	UNIVERSITY OF ABERDEEN.	UNIVERSITY OF ST ANDREWS.
Anatomy, Systematic and Practical, with Demonstrations.	Professor Turner.	Dr Handyside.	Dr A. Thomson.	Dr George Buchanan.	Professor Struthers.	...
Physiology, or Institutes of Medicine.*	Dr Bennett.	Dr Sanders.	Dr A. Buchanan.	Dr E. Watson.	Dr Ogilvie.	Dr Oswald Bell.
Chemistry, and Practical Chemistry.	Dr Playfair.	Dr Macadam. Dr C. Brown.	Dr T. Anderson.	Dr Penny.	Professor Brazier.	Dr F. Heddle.
Materia Medica and Therapeutics.	Dr Christison.	In Summer.	Dr Cowan.	Dr Morton.	In Summer.	...
Practice of Medicine.	Dr Laycock.	Dr Haldane.† Dr Balfour.	Dr Gairdner.	Dr M'Call Anderson.	Dr Macrobin.	...
Surgery.	Professor Spence.	Dr Watson.† Dr Jos. Bell. Mr Annandale.	Prof. Lister.	Dr Macleod.	Professor Pirrie.	...
Midwifery.	Sir J. Y. Simpson, Bt.	In Summer.	Dr Pagan.	In Summer.	Dr Dyce.	...
Natural Philosophy.	Professor Tait.	Mr Lees.	Sir Wm. Thomson.	Mr Herschel.	Professor Thomson.	Professor Fischer.
Natural History.	Professor Allman.	...	Dr Young.	...	Professor Nicol.	...
General Pathology.	Dr Henderson.	Dr Grainger Stewart.	...	...	...	...
Clinical Medicine.	Drs Bennett, Laycock, and Maclagan.	Drs Sanders,‡ Haldane, Balfour, and J. M. Duncan.	The Physicians of the Royal Infirmary.		Drs Harvey and Smith.	...
Clinical Surgery.	Professor Syme.	Dr Gillespie.	The Surgeons of the Royal Infirmary.		Drs Keith and Pirrie.	...

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* This course is equivalent to that given under the name of General Anatomy and Physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students, which should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

‡ This is a joint course.

MEDICAL SCHOOLS OF SCOTLAND, 1868.

SUMMER SESSION.

Subjects.	University of Edinburgh.	Surgeons' Hall, Edinburgh.	University of Glasgow.	Anderson's University, Glasgow.	University of Aberdeen.
Practical Anatomy and Demonstrations.	Professor Turner.	Dr Handyside.	Dr A. Thomson.	Dr George Buchanan.	Professor Struthers.
Botany.	Dr Balfour.	...	Dr W. Arnott.	Mr Hennedy.	Dr Dickie.
Materia Medica.	...	Dr Angus Macdonald.	...	...	Dr Harvey.
Midwifery.	...	Dr Keiller.* Dr Duncan.	...	Dr Wilson.	...
Medical Jurisprudence.	Dr Maclagan.	Dr Littlejohn.†	Dr Rainy.†	Dr Leishman.	Dr Ogston.†
Comparative Anatomy.	Professor Turner.	Dr Handyside.	...	...	Prof. Nicol.
Histology.	Dr Bennett.	Dr Sanders.	...	...	Dr Struthers.
Practical Chemistry.	Dr Playfair.	Dr Macadam.* Dr Crum Brown.	Dr T. Anderson.	Dr Penny.	Prof. Brazier.
Natural Philosophy.	...	Mr Lees.	...	..	...
Natural History.	Professor Allman.	...	Dr Young.	...	...
Clinical Medicine.	Drs Bennett, Laycock, and Maclagan.	Drs Sanders,‡ Haldane, Balfour, and J. M. Duncan.	The Physicians of the Royal Infirmary.		Drs Harvey and Smith
Clinical Surgery.	Prof. Syme.	Dr Gillespie.	The Surgeons of the Royal Infirmary.		Drs Keith and Pirrie.

* These are not conjoint courses, but separate ones by the gentlemen named.
† Drs Rainy and Ogston deliver their courses only in winter. Dr Littlejohn gives courses during both the winter and summer sessions.
‡ This is a joint course.

For additional Summer Courses on special subjects, see the Prospectus of each School.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

ROYAL INFIRMARY, including LOCK HOSPITAL. Upwards of 560 Beds. Visits daily from 12 till 2 P.M. Physicians—Drs Bennett, Laycock, and Maclagan, Professors of Clinical Medicine; Sir J. Y. Simpson, Clinical Professor for Diseases of Women; Drs W. R. Sanders, D. R. Haldane, G. W. Balfour, Clinical Lecturers; Dr J. Matthews Duncan (on Diseases of Women). Pathologist, Dr Grainger Stewart.

Surgeons—Mr Syme, Professor of Clinical Surgery; Professor Spence; Dr Gillespie, Clinical Lecturer; Dr P. H. Watson. Assistant Surgeon, Mr Annandale. Assistant Surgeon to Clinical Wards, Dr Joseph Bell. Consulting Surgeon, Dr Dunsmure. Ophthalmic Surgeon, Mr Walker; Assistant, Dr Argyll Robertson. Dental Surgeon, Dr John Smith.

CONVALESCENT HOUSE, Corstorphine. Visiting Medical Officer, Mr Annandale.

CHALMERS' HOSPITAL FOR THE SICK AND HURT. 24 Beds for medical and surgical patients. Physician, Dr Halliday Douglas; Surgeon, Dr P. H. Watson.

ROYAL MATERNITY HOSPITAL. 36 Beds; 279 in-patients and 380 out-patients annually. Consulting Physicians—Drs Sir J. Y. Simpson and Moir. Physicians—Drs Weir, Keiller, C. Bell, and Ziegler. Surgeon, Dr Dunsmure.

ROYAL HOSPITAL FOR SICK CHILDREN. 40 Beds; average number of out-patients, about 5500. Consulting Physicians—Professor Christison and Dr C. Wilson. Physicians—Drs Graham Weir, Keiller, and Grainger Stewart. Extra Physicians—Drs Stephenson and Ritchie. Surgeon-Dentist, Dr Smith.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 11,500 patients annually. Medical Officers—Drs Ritchie, Pattison, Stephenson, Cairns, Spence, Linton, Balfour, Sanders, Husband, Macdonald, Somerville, D. Wilson. Physicians-Accoucheurs—Drs Keiller, Matthews Duncan, Pattison. Superintendent of Vaccination, Dr Husband. Visits daily at 2 P.M. Vaccination on Wednesdays and Saturdays at 12 noon.

NEW TOWN DISPENSARY. About 9000 patients annually. Medical Officers—Drs J. Hunter, Dycer, Joseph Bell, A. Dickson, Claud Muirhead, Miller, Cheyne, and Cunynghame. Physician-Accoucheur, Dr Andrew Inglis. Superintendent of Vaccination, Dr J. Hunter. Visits daily at 2 P.M. Vaccination on Tuesdays and Fridays from 12 to 1.

CARRUBBER'S CLOSE DISPENSARY. About 4000 patients annually. Medical Officers—Drs Millar, F.R.C.S., Stevenson Smith, and Stirling. Visits daily at 2 P.M. Vaccination on Mondays and Thursdays at same hour.

ROYAL ASYLUM FOR THE INSANE. About 660 patients. Physician, Dr Skae. Lectures and Clinical Visits in summer.

EYE INFIRMARY, 6 Cambridge Street, Lothian Road. Surgeons—Benjamin Bell, Esq., F.R.C.S., and Dr Joseph Bell, F.R.C.S. Open daily at 1 P.M. Average number of patients annually, 900.

EYE DISPENSARY, Cockburn Street. 1150 patients annually. Surgeons—Mr Walker, Dr Wilson, and Dr Argyll Robertson. Open Monday, Wednesday, and Friday, at 1 P.M.

EAR DISPENSARY, 54 Cockburn Street. Drs T. Keith and Jackson. Tuesdays at 12. Average, about 20 cases daily.

Dental Dispensary, Cockburn Street. Consulting Surgeon, Professor Spence. Consulting Physician, Dr Sanders. Consulting Surgeon-Dentist, Mr Nasmyth, F.R.C.S. Dental Surgeons—Dr John Smith, Dr Orphoot, Mr Hutchins, Dr Roberts, Dr Hogue, Dr Swanson. Daily, 9 to 10 a.m. Average number of patients, 4000 per annum.

GLASGOW.

Royal Infirmary. 600 Beds. Visits daily at 8.30 a.m. Physicians—Drs Scott Orr, W. T. Gairdner, Leishman, Steven, and Perry. Physicians to out-patients—Drs M'Laren and James Stewart.

Surgeons—Dr G. Buchanan, Professor Lister, Drs E. Watson and Donald Dewar. To out-patients—Drs G. H. B. Macleod and James Dunlop. Pathologist—Dr S. Johnston Moore. Superintendent—Dr M. Thomas.

Lock Hospital. 47 Beds. Medical Officers—Drs G. H. B. Macleod and James Dunlop.

Lying-in Hospital and Dispensary. 24 Beds; in-patients, 326; out-patients, 353. Physicians-Accouchers—Drs J. G. Wilson and R. D. Tannahill. Consulting Physician—Dr A. Anderson. Consulting Surgeon—Dr George Buchanan. Dispensary Physicians—Drs Dewar and Yeaman.

University Lying-in Hospital and Dispensary. In-patients, about 750; out-patients, about 2500. Physicians—Drs Pagan, Leishman, and John Wilson.

Royal Asylum for the Insane. About 680 patients. Physician-Superintendent, Dr A. Macintosh.

Eye Infirmary. 24 Beds; 160 in-patients; 2497 out-patients annually. Consulting Surgeons—Drs Rainy and A. Anderson. Ordinary Surgeons—Drs W. Mackenzie and W. Brown. Assistant Surgeons—Drs G. Rainy and T. Reid.

Ear Dispensary. About 400 patients annually. Surgeon—Dr Dewar. Open on Tuesdays, Thursdays, and Saturdays, at 3 p.m.

Dispensary for Skin Diseases. About 1400 patients. Physician—Dr M'Call Anderson. Practical Courses in Diseases of the Skin and Ear. The Dispensary is open on Mondays and Wednesdays at 2 p.m., and on Tuesdays for Diseases of the Ear.

ABERDEEN.

Royal Infirmary. Upwards of 300 Beds. Visits daily at 12 o'clock. Physicians—Drs Harvey, Smith, and Reith.

Surgeons—Drs Keith, Pirrie, Kerr, Fiddes. Ophthalmic Surgeon—Dr Wolfe. Pathologist—Dr Beveridge. Dental Surgeon—Mr Williamson.

General Dispensary, Lying-in and Vaccine Institution. Upwards of 6000 patients annually. Medical Officers—Drs Forsyth, Sutherland, and Christie; Messrs Smith, Paterson, and Fraser. Visits daily at 9.30 a.m. Vaccination every Wednesday at 3 p.m.

Lunatic Asylum. Above 300 patients. Consulting Physician—Dr Macrobin. Resident Physician—Dr Robert Jamieson. Clinical Lectures in summer.

Ophthalmic Institution. 600 patients. Surgeon—Dr Wolfe

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

REGULATIONS REGARDING THE FELLOWSHIP AND MEMBERSHIP OF THE COLLEGE.

I. *Of the Fellowship.*

1. No one shall be elected a Fellow of the College until he has been at least one year a Member thereof, and has attained the age of twenty-five years.

2. Every motion for the election of a Fellow shall be made at a quarterly meeting of Fellows by one of the Fellows present, and seconded by another; and this motion shall be determined by ballot at the next quarterly meeting of Fellows,—a majority of three-fourths being necessary to carry it in the affirmative.

3. If an urgent reason, satisfactory to the Council, be assigned, a candidate may be proposed at an extraordinary meeting of the Fellows summoned for the purpose, and his petition may be balloted for at an extraordinary meeting of the Fellows specially summoned for the purpose; provided that the holding of this special meeting be agreed to by a majority of five-sixths of the Fellows present at the meeting at which the candidate was proposed: provided also that not less than one week intervene between the two meetings, and that due notice of the intended ballot be given in the billets summoning the second meeting. The candidate shall in this case pay to the Treasurer a sum of ten guineas in addition to the ordinary fees.

4. Every Fellow resident within five miles from the General Post-Office of Edinburgh shall, on his election, have his name placed on the roll of attendance, and shall pay the annual contribution, and be subject to all the laws of the College regarding fines. Fellows resident beyond five miles shall have the option of having their names on the roll of attendance or not; but if their names be on the roll of attendance, they shall pay the annual contribution, and be subject to fines.

5. Any Fellow may petition that his name be taken off the roll of attendance; which petition shall be determined by ballot at next quarterly meeting.

6. Any Fellow whose name is not on the roll of attendance may have it inserted by giving notice to the Secretary, who shall report to the next quarterly meeting; after which, the Fellow shall be entitled to all the privileges of the Fellowship, and may take his seat at the first meeting of the College.

7. Any Fellow leaving Edinburgh for a length of time, and omitting to petition to have his name taken off the roll of attendance, or wishing the same to be continued on it during his absence, shall be charged with his annual contribution and fines.

8. Fellows whose names are not on the roll of attendance shall not have the use of the library and reading-room, except in the cases specified in Laws 9 and 10.

9. Fellows whose names are not on the roll of attendance, on coming to reside in Edinburgh, or within five miles thereof, for a period not exceeding six months, may, with consent of the Council, be allowed the use of the library and reading-room.

10. Fellows not on the roll of attendance, who reside permanently in Edinburgh, or within five miles thereof, but are not engaged in practice, may, with consent of the Council, be allowed the use of the library and reading-room on payment of the annual contribution.

II. *Of the Membership.*

1. Any Licentiate of a College of Physicians, or Graduate of a British or Irish University, with whose knowledge of medical and general science the College may be satisfied, may be admitted a Member of the College, provided he shall have attained the age of twenty-four years.

2. Every motion for the election of a Member shall be made at a quarterly meeting of Fellows by one of the Fellows present, and seconded by another; and this motion shall be determined by ballot at the next quarterly meeting,—a majority of three-fourths being necessary to carry it in the affirmative.

3. Every Member on the roll of attendance, whose address has been communicated to the Clerk, shall be summoned to attend all meetings of the Fellows and Members.

III. *Of the Fees.*

1. The fee to be paid by a Member shall be thirty guineas.

2. When a Licentiate shall be raised to the rank of Member, he shall pay twenty guineas.

3. When a Member shall be raised to the rank of Fellow, he shall pay thirty guineas, exclusive of stamp-duty. The stamp-duty on the Fellowship payable to Government is £25.

4. All Candidates for Fellowship or Membership must lodge their Fees, and the amount of stamp-duty payable at the time to Government, with the Treasurer, previously to presenting their petitions.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

ABSTRACT OF REGULATIONS FOR THE FELLOWSHIP.

1. No person shall be received as a candidate for the Fellowship who is not in possession of the diploma of the Royal College of Surgeons of Edinburgh, or of the Royal College of Surgeons of England, or of the Royal College of Surgeons of Ireland, or of the Faculty of Physicians and Surgeons of Glasgow.

2. No person shall be admitted as a Fellow who is under twenty-five years of age.

3. Every candidate for the Fellowship shall lodge with the President a petition for admission, and shall be recommended by two Fellows as proposer and seconder, of whom one at least shall be resident in Edinburgh.

4. Candidates for the Fellowship shall pay £25 to the College funds, including all fees. The money shall be payable to the Treasurer immediately after the presentation of the petition to the College.

5. The billets calling the meeting at which the petition is to be presented, shall intimate the name and surgical qualification of the candidate, his professional appointments, if any, and the names of his proposer and seconder.

6. The petition shall be considered at a subsequent meeting, to be held not earlier than a month after the first; and in the meantime, the petition, with the names of the proposer and the seconder, shall be hung up in the library; and the billets calling the second meeting shall contain an intimation in the same form as those of the first.

7. At the meeting for considering the petition of the candidate, the votes shall be given by ballot. Three-fourths of the votes are required to entitle the candidate to be admitted; and the number of those voting shall not be less than twenty.

FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.

ABSTRACT OF REGULATIONS FOR THE ELECTION AND ADMISSION OF FELLOWS.

1. A candidate for the Fellowship of the Faculty as a Physician must be a Doctor of Medicine of a University of the United Kingdom, or of a Foreign University recognised by the Faculty. A candidate for the Fellowship as a Surgeon must be a Licentiate of the Faculty, or a Fellow, Member, or Licentiate of one of the Royal Colleges of Surgeons of the United Kingdom.

2. A candidate must be proposed, in writing, by two Fellows, at an ordinary meeting of the Faculty. But no proposal shall be received until the candidate

shall have intimated, by letter, to the President, the medical or surgical qualification (as the case may be) in virtue of which he desires admission to the Fellowship. After having been proposed he shall submit to the Council all necessary evidence of his professional qualifications, and of his being of unexceptionable moral character.

3. A copy of the proposal shall be placed in the reading-room till the next ordinary meeting of the Faculty; when, the Council having reported as to his eligibility, and no reasonable ground for delay being shown, the Faculty shall determine, by a ballot, whether or not the candidate shall be admitted as a Fellow

4. For the election of a Fellow, two-thirds of the votes given must be in favour of his admission. An excerpt of the minutes of the meeting, giving the result of the ballot, shall be sent by the Clerk of the Faculty to the candidate, who, if elected, shall, at the next meeting of the Faculty or of the Council thereof, be enrolled as a Fellow, upon making and subscribing the declaration required by the Faculty.

5. The entrance fee (to be deposited at the date of his proposal) shall be £50; but from this sum a Licentiate of the Faculty shall be entitled to a deduction of whatever amount he may have already paid for his diploma.

6. A candidate residing beyond five miles from the Faculty Hall, on being elected in the usual way, may, upon payment of £25 (subject in the case of a Licentiate of the Faculty to deduction of one-half of the licence fee) be admitted a Fellow.

ARMY MEDICAL DEPARTMENT.

WHITEHALL-YARD.

QUALIFICATIONS AND EXAMINATION OF CANDIDATES FOR COMMISSIONS IN THE ARMY MEDICAL SERVICE.

1. Every candidate desirous of presenting himself for admission to the Competitive Examination required for the Army Medical Service must be unmarried. He must produce a birth certificate from the District Registrar, or a certificate of baptism in which the date of birth is stated; or if neither of these can be obtained, an affidavit from one of the parents, or from some other near relative who can attest the date of birth, will be accepted. The certificate or affidavit must show that the candidate is not above twenty-eight nor under twenty-one years of age. He must also produce certificates of moral conduct and character, one of them from the parochial minister if possible.

2. The candidate must make a declaration that he labours under no mental or constitutional disease, nor any imperfection or disability that can interfere with the most efficient discharge of the duties of a medical officer in any climate. He must also attest his readiness to engage for general service immediately on being gazetted.

3. The candidate must possess a diploma in Surgery, or a licence to practise it, as well as a degree in Medicine, or a licence to practice it, in Great Britain or Ireland.

4. Certificates of registration in accordance with the Medical Act of 1858, and of age and character, must be lodged at the Army Medical Department, for examination and registry, at least one week before the candidate appears for examination.

5. On producing the foregoing qualifications, the candidate will be examined by the Examining Board in the following subjects:—Anatomy and Physiology; Surgery; Medicine, including Therapeutics, the Diseases of Women and Children, Chemistry and Pharmacy, and a practical knowledge of drugs. (The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the

examination of medical and surgical patients at the bedside.) The eligibility of each candidate for the Army Medical Service will be determined by the result of the examinations in these subjects only. Candidates *who desire it* will be examined in Comparative Anatomy, Zoology, and Botany, with special reference to Materia Medica, and the number of marks gained in these subjects will be added to the total number of marks obtained in the obligatory part of the examination by candidates who shall have been found qualified for admission, and whose position on the list of successful competitors will thus be improved in proportion to their knowledge of these branches of science.

6. The names of candidates who pass the preliminary examination of the Examining Board will be sent to the Director-General and communicated to the Professors of the Army Medical School. The names will be arranged in the order of merit.

7. After passing his preliminary examination, every candidate will be required to attend one entire course of practical instruction at the Army Medical School before being admitted to his examination for a commission. These courses to be of not less than four months' duration.

8. At their conclusion, the candidate will be required to pass an examination on the subjects taught in the School. The examination will be conducted by the Professors of the School. The Director-General, or any medical officer deputed by him may be present and take part in the examination. If the candidate give satisfactory evidence of being qualified for the practical duties of an Army Medical Officer, he will be eligible for a commission as assistant-surgeon.

9. During the period of his residence at the Army Medical School, each candidate will receive an allowance of 5s. per diem, with quarters, or 7s. per diem without quarters, to cover all cost of maintenance, and he will be required to provide himself with uniform (viz., the regulation undress uniform of an assistant-surgeon, but without the sword) .

10. All candidates will be required to conform to such rules of discipline as the senate may from time to time enact. The assistant-surgeon is subjected to three separate examinations within the first ten years of his service, each examination having a definite object. The first to ascertain, previous to his admission into the service as a candidate, his scientific and professional education, and to test his acquirements in the various branches of professional knowledge; the second, after having passed through a course of special instruction in the Army Medical School, to test his knowledge of the special duties of an Army Medical Officer; and the third, previous to his promotion, to ascertain that he has kept pace with the progress of medical science.

11. The Competitive Examinations for commissions in the Army Medical Service are held at Chelsea on the second Monday of February and August in each year.

ARMY MEDICAL SCHOOL.

ROYAL VICTORIA HOSPITAL, NETLEY.

President of the Senate.—T. G. Logan, C.B., M.D., Director-General of the Army Medical Department.

Members of the Senate.—Sir Ranald Martin, G.B., Physician to the Indian Council; Inspector-General W. M. Muir, C.B., M.D., Principal Medical Officer, Royal Victoria Hospital; Deputy Inspector-General T. Longmore, C.B., Professor of Military Surgery; Deputy Inspector-General W. C. Maclean, Professor of Military Medicine; William Aitken, M.D., Professor of Pathology; E. A. Parkes, M.D., F.R.S., Professor of Military Hygiene.

Assistant Professors.—Staff-Surgeon-Major W. A. Mackinnon, C.B.; Staff-Surgeon W. J. Fyffe, F. François de Chaumont, and Staff-Assistant-Surgeon V. Wearne.

Candidates for commissions in the Army, and in the Queen's Indian Service, proceed to Netley after passing the Competitive Examination at Chelsea. At

Netley they attend the Medical and Surgical practice of the Royal Victoria Hospital, and learn the system and arrangements of Military Hospitals. During four months they attend the lectures given by the Professors and Assistant-Professors, and go through a course of practical instruction in the Hygienic Laboratory and Microscopical Room. The lectures and practical instruction are intended to explain the specialties of Military Medical Practice, attention being directed to gunshot and other wounds, surgical arrangements in the field during action and sieges, means of transport, field hospitals, tropical diseases and their means of investigation, service in India and in the various colonies, the sanitary arrangements in peace and war, and the means of carrying out the sanitary regulations. Every opportunity is taken of practising operations on the dead body and practical points of a like kind. See Nos. 9 and 10 above.

NAVY MEDICAL DEPARTMENT.

REGULATIONS RELATIVE TO THE EXAMINATION OF CANDIDATES FOR THE APPOINTMENT OF ASSISTANT-SURGEON IN THE ROYAL NAVY.

1. That a candidate for entry into the Royal Navy shall make a written application to that effect, addressed to the Secretary of the Admiralty, on the receipt of which application he will be furnished with the regulations, and a printed form, to be filled up by him, to show if he possesses the required qualification.

2. As vacancies occur, the number of candidates required will be ordered to attend at the Admiralty Office on the first Tuesday in alternate months, commencing with Tuesday, July 2, 1867; but it is to be observed, that no person can be admitted as an assistant-surgeon in the Royal Navy unless he can produce satisfactory evidence that his name has been placed on the Medical Register as legally qualified to practice both Medicine and Surgery according to the regulations established by the Medical Act. And further, he will be required to make a declaration that he is free from any mental or bodily disease, defect, or infirmity, which could interfere with the efficient discharge of his duties as a medical officer in the Navy.[1]

3. Each candidate will be required to produce a certificate of good moral character, signed by the clergyman of the parish, or by the magistrate of the district.

4. A certificate that he is not less than twenty nor more than twenty-eight years of age.

5. That he has received a preliminary classical education.

6. That subsequently to the age of eighteen he has actually attended a recognised hospital for eighteen months, in which the average number of patients is not less than one hundred.

7. That he has been engaged in actual dissection for twelve months, and that he has performed the principal capital and minor operations on the dead body under a qualified teacher. The certificates of Practical Anatomy must state the number of subjects or parts dissected by the candidate.

8. On producing the above certificates, he will be examined before a Board of Naval Medical officers, specially summoned by their Lordships, on the following subjects, viz.:—Anatomy, Surgery, Physiology, or Institutes of Medicine, Practice of Medicine, Chemistry, Materia Medica, Midwifery, Botany.

9. Although the above are the only qualifications which are absolutely required in candidates for the appointment of assistant-surgeon, a favourable consideration will be given to those who have obtained the degree of M.D. from any university in the United Kingdom, or who, by possessing a know-

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[1] His physical fitness will be determined by the Board of Medical Officers, who will be required to certify that his vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses, and that he is free from organic disease, constitutional weakness, or other disability likely to unfit him for the Naval Service in any climate.

ledge of the diseases of the eye, or of any branch of science connected with the profession—such as Medical Jurisprudence, Natural History, and Natural Philosophy—appear to be more peculiarly eligible for admission into the service; observing, however, that lectures on these or any other subjects cannot be admitted as compensating for any deficiency in those required by the regulations.

10. Such candidates as shall have been found in all respects competent for the appointment of assistant-surgeon will be forthwith nominated to one of Her Majesty's Ships, or to a Naval Hospital at home; or, should their services not be immediately required, their names will be duly registered for early appointments as vacancies may occur. But it is distinctly to be observed, that candidates admitted into the Naval Medical Service must serve in whatever ship they may be appointed to; and that in the event of their being unable to do so from sea-sickness, their names cannot be continued on the Naval Medical List, nor can they, of course, be allowed half-pay.

11. No assistant-surgeon can be promoted to the rank of surgeon until he shall have served five years, two of which must have been in a ship actually employed at sea, after which he will be required to pass an examination before a Board of Naval Medical Officers, assembled at the department of the Medical Director-General of the Navy.

12. Assistant-surgeons at home, after completing the stipulated five years' service, may, if the public service will admit, be granted two months' leave of absence on full pay, on condition of their resuming their studies at a medical school or hospital.

13. A limited number of those candidates who pass the best examination on entering the service shall be promoted annually to the rank of surgeon at an earlier period than would occur under ordinary circumstances; those promotions being awarded as follows:—The candidate who passes the best axamination of his year—after five years' service. The candidate who passes the second best examination of his year—after six years' service. The candidate who passes the third best examination of his year—after seven years' service. Provided, however, that their second examinations are passed in an equally creditable manner, and that their conduct during the whole time they have been in the service has in all respects been satisfactory.

Part Second.

REVIEWS.

De l'Évidement sous-périosté des Os. Par M. le docteur CH. SÉDILLOT, Medicin Inspecteur des Armées, Directeur de l'Ecole imperiale du Service de Santé militaire, Professeur de Clinique chirurgicale à la Faculté de Médecine de Strasbourg, Commandeur de la Légion d'Honneur, Membre correspondant de l'Institut impérial de France (Académie des Sciences), Associé national de l'Académie imperiale de Médicine, etc., etc. Deuxième edition, avec planches polychromiques. Paris: J.-B. Baillière et fils: 1867: 1 vol. oct., 438 pp. [On Subperiosteal Gouging of Bone. By Dr CH. SÉDILLOT, etc.]

HAVING lately analyzed very fully in these pages the great work of M. Ollier, of Lyons, on subperiosteal resection of bone, we may now turn to the work of his still greater rival, which, on the same subject, divided the "grand prix de chirurgie," and has added another to the many honours gained by the illustrious Professor of Clinical Surgery at Strasbourg.

While to us, at a distance from the scene of conflict, these two great works appear to be in many respects very like each other, it is obvious that, to their authors, they appear widely different. Absolutely identical in subject, and alike approaching their subject in the same true spirit of scientific inquiry, first by experiments on animals, and then by a careful accumulation of clinical observations, very closely imitating each other in operative procedure, differing, where they do differ, more, we believe, in the principles guiding operation than in the actual operations; to us, Ollier and Sédillot appear true yoke-fellows, joint contributors to the progress of conservative Surgery. Not so does it appear to the combatants. In the eyes of Sédillot at least, differences bulk so large as to hide resemblances. He will not agree to differ. In his eyes, if he is right, and of this he has no doubt, Ollier must be wrong, and hopelessly wrong. Hear him tell us so in his forcible and able preface:—"We are able to declare that this method (évidement) is the only true and the only useful and generally applicable method of preserving limbs and avoiding amputations. We reject subperiosteal resections as illogical, inefficacious, and dangerous. . . . . Our disagreement with the partizans of subperiosteal resections is thus complete. Either we are wrong, or our adversaries are wrong. Truth and error cannot face each other long in the sciences of operation; one advances, the other must retire; one is light, the other darkness; one is usefulness and success, the other danger and failure." The younger surgeon does not see the controversy in so strong a light; still it is evident that the two, united by similarity of subject, and by the verdict of the Academy, do not see that they really are pulling in the same direction.

M. Sédillot's work is a smaller and more compact one than that of M. Ollier, containing much less historical detail and comparatively few experiments on animals, but very much richer in clinical illustrations of the doctrines advanced. To a few of the more important and interesting of these we may allude after a short analysis of the earlier chapters.

In a brief introduction, M. Sédillot merely refers to the names of the earlier authors who have left their mark on this branch of surgical science, and then returns to the topic already touched on in the preface, *i.e.*, the position which he holds in relation to subperiosteal resections. He tells that, in the first edition of this work (Paris, 1860), he protested against being thought one of the systematic opponents of subperiosteal resections, of which mode he had recognised the originality and theoretic importance. Now he has to condemn that method most absolutely, for various reasons which he briefly cites. A clever discussion of the relative value of—1. Experiments on animals; 2. Pathological facts; and 3. Clinical experiments, based on knowledge gained from the first two, and proving or disproving them, then follows, which again leads us back to the old topic, the absolute necessity of rejecting subperiosteal resections, and of adopting "évidement sous-périosté."

Chapter I. describes very briefly the means of treatment of the diseases of bones from the time of Celsus to the present day. It is a mere sketch, just touching on some of the chief lesions and on one or two of the principal authors; yet, here and there, a stroke of description, or the enunciation of a principle, evince the keenness of insight and the vast powers of generalization for which the distinguished surgeon of Strasburg is renowned. The section in which he brings out the bearings of the cellular theory, on such points as the absence of ossification in the periosteum at spots where there has been suppuration, the disintegration and removal of certain sequestra, and the gradual loosening of all, is very interesting in a pathological point of view. By quotations from Boyer, Sanson, Cloquet, Vidal, and Nélaton, it is then proved that évidement is an original operation; for though the principle had once been enunciated that diseased portions of bone could and ought to be removed, the principle was forgotten and the practice abandoned.

Chapter II., on ostéogénie chirurgicale, is much longer, including nearly one hundred pages. It commences by a brief *resumé* of the old theories regarding reproduction and reunion of bone by means of an osseous juice, which was derived from blood, from plastic lymph, or from the soft parts, according to the various pathological views held at various dates. M. Sédillot expresses his opinion that all opposing theories are fated to disappear in a very short time before the revelations of the cellular hypothesis. "The source of ossification is to be found in the cells of the marrow, which are disseminated through the whole thickness of the osseous structure." "It is not now-a-days possible to admit that the osseous tissue reproduced after subperiosteal resections is due necessarily and always to the cellular proliferation of the flaps of periosteum, isolated and detached from the subjacent bones. This result can really occur only in those cases (very rare in man) where suppuration has been avoided."

On this question, of suppuration of the periosteal flap being incompatible with ossification, M. Sédillot insists strongly. It is his chief argument against subperiosteal resection and in favour of "évidement." In proof of it he appeals to the numerous cases in which various surgeons have, in amputation, saved flaps of periosteum, with which they covered in the end of the bone, and all of which he says have proved unsuccessful, so far as any ossification is concerned. On this account, too, M. Sédillot recommends that splinters of bone still adherent to periosteum should be carefully saved in cases of fracture. He holds that the periosteum, if the bone be detached, however carefully, inevitably suppurates, and is useless; while, if left attached, the bone either survives and aids in mending the fracture, or else becomes necrosed and eventually detached, without, in this latter case, destroying the life of the periosteum, which, on removal of the exfoliation, is very useful. After a few remarks on the manner in which a bone remedies loss of substance, especially if a portion of its whole thickness be removed, we have a brief statement of the indications on which M. Sédillot bases the principle of his operation of "évidement."

> "The first indication is, that no part of the skeleton which still remains healthy should be sacrificed, since such a layer of bone clothed in its periosteum is the most efficacious and certain means of reproducing the whole of the bone. This is the chief support of our method of "évidement," and the chief objection against subperiosteal resections.
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> "The second indication is, to attempt to preserve a limb, so long as there is any chance of the preservation and restoration of the bone, notwithstanding the most extensive and severe wounds, and to learn to trust to time for the restoration of its functions.
>
> "The third indication consists in preserving all the healthy and adherent portions of periosteum, and never detaching them from subjacent bones. The experience of ages has taught that the limbs must be maintained immobile—their length being retained so far as possible. Undue compression should be avoided, in order that free space may be left for cellular proliferation. Suppuration should be prevented, or at least put a stop to as soon as possible, a free discharge should be given to fluids, and care should be taken to preserve or re-establish the regularity of the surfaces destined to act as a mould for the new bone, so as to maintain its contour, and render it more fitted for the subsequent exercise of its functions."—P. 47.

After following up more fully in a few pages these three indications, M. Sédillot next inserts entire, or nearly so, a series of communications on the subject of osteogeny, which he had at various dates communicated to the Academy of Sciences. Some of these are very interesting, especially one on the influence of function upon structure. We have no space for either quotation or analysis. The experiments of the author on animals are then briefly detailed, and the following conclusions (among others) derived:—

> "*Évidement* of the diaphysis and extremities, without destruction of the peripheral bony layer, and consequently without penetration of a joint, is almost invariably a successful operation." "Longitudinal resections of the articular extremities have in most instances been followed by few accidents, with the exception of those of the knee, which were almost invariably fatal."

After this is inserted a memoir read by M. Sédillot in 1864, in which he criticizes with considerable severity the well-known experiments of Heine on the regeneration of bone by the preservation of periosteum. He takes great exception to the language in which Heine has described some of his results in the French Catalogue of the Preparations at Würtzbourg. To this is added a description of the preparations made by Dr Marmy on the regeneration of bone with or without preservation of the periosteum. His experiments are very interesting, and, being more recent and less known, will repay perusal. His conclusions, as quoted here, are so far puzzling as being in many respects contradictory of the results obtained from similar experiments by M. Ollier. Thus, in opposition to the general opinion of experimenters, Dr. Marmy has obtained better results from resections of the diaphysis, in which the periosteum was removed, than in those in which it was retained. So far as we can judge from merely reading descriptions, we believe M. Ollier's experiments to be the most reliable. Marmy, however, has proved the complete success of all the "évidements sous-périostés" even when only a half or a third of the circumference of the diaphysis was retained. M. Marmy's results meet with M. Sédillot's fullest approval.

Chapter III., on subperiosteal gouging (évidement) of bone, commences with the following sentence:—

> "*Definition.*—Gouging is an operation by which we hollow out or excavate a bone for the purpose of removing diseased parts, and leave only the healthy, external, peripheral, or cortical layers immediately beneath the periosteum. The shape of the limb is thus not at all interfered with, the attachments of muscles are preserved, the periosteum remains intact, and the reproduction of bone takes place under the periosteum and in the interior of the excavated bone."

After thus defining the operation, M. Sédillot alludes to certain experiments on animals, and then discusses the history of the subject, and claims and defends his claim to priority and originality. He then comes to more practical details, and describes, in paragraphs too long to translate, the general principles of his method of operating, the requisite dressings, the manner in which nature afterwards effects repair, and some of the accidents to which the operation is liable.

Then commences, what will to many surgeons prove the most interesting part of the work, a series of upwards of 30 cases, in which évidement has been practised by M. Sédillot and his fellow workers. The results are on the whole highly satisfactory,—out of the 32 there being only 4 fatal cases, and the same number of secondary amputations. A paragraph on the advantages of "évidement" closes this most interesting and instructive chapter.

While the last chapter recorded new facts, and endeavoured to establish a new operation, the next one we come to (Chapter IV.) is devoted to a most severe and sifting examination of the recorded cases of other surgeons, and a fierce onslaught on the operations of subperiosteal and subcapsulo-periosteal resections. Though one-sided, it is full of cleverness, hits some blots, and exposes some exaggerations; but is evidently the expression of the feeling of a partizan rather than of a judge, of an impassioned combatant rather than a cool bystander. A sentence or two may be quoted from the commencement of the chapter, which will serve to show the point of view from which M. Sédillot looks at the subject:—

> "Whenever one endeavours to demonstrate the inanity of subperiosteal resections, one is answered by proofs that periosteum can make bone. That this is the case is indisputable, and is so little disputed that we regard it as the foundation of our method of "évidement," the design of which is to preserve the periosteum in as favourable a condition as possible for repair of the bone. The true question is, not whether periosteum produces bone, since every body is at one on that point since the days of Duhamel, but, whether flaps of periosteum, isolated and separated from the bones below, can reproduce without danger, with success, and better than "*évidement*," a true bone capable of fulfilling the functions of the one removed. It is not sufficient in Surgery for an operation merely to be successful, it ought to succeed better than another operation if it is to replace it; that is, it should give more favourable results as regards *safety*, *rapidity*, and *completeness* of cure. On these various grounds, we absolutely oppose subperiosteal resections."—P. 212.

He then criticizes previous experiments on animals, chiefly those of Heine, Larghi, and Ollier, after which he comes to the clinical cases recorded by Larghi, Borelli, Ollier, and their followers and imitators. His analysis is very close and exhaustive; and many of the cases are extremely interesting in themselves, even without the caustic commentary of their terrible critic. One case by Larghi, in which considerable portions of three ribs had been removed successfully, with complete reproduction, is fully reported, and illustrates his method of operating, and the ease with which the periosteum may be separated in suitable cases. He exposes the whole of the portion of bone to be removed by a longitudinal incision, then scrapes off the periosteum from the anterior surface in two equal longitudinal flaps, till he is able to pass the needle of Deschamps round the bone, between it and the periosteum: by it a silk thread is conveyed, with which it is easy to separate the rest of the periosteum to the required length.

Dr Paravicini reports a case which illustrates too well the occasionally conflicting nature of medical evidence. It is one of subperiosteal resection of the left half of the lower jaw, which he removed entire, including the coronoid process and the condyle, from the interior of the mouth without any incision through the skin. *Three weeks* afterwards, the patient was cured without deformity, and with a new bone well advanced in formation. This "tour de force" naturally surprises even the dexterous Strasbourg surgeon; and in the text he expresses grave doubts as to the accuracy of the observation and as to the results. In a note, these doubts are at least strengthened by a letter from Professor Gherini, who, *three years* after the operation, writes: "J'ai vu l'opéré de M. Paravicini le mois dernier. *Il n'y a pas un seul atome de reproduction osseuse.*" —P. 280.

A detailed criticism of some cases of subperiosteal resection, by Giraldès, Aubert, Ollier, and others, prepares us for the strong expression of opinion with which M. Sédillot closes this section, "that the abandonment of the method of subperiosteal resections, as a method of regenerating bone, has become a question of humanity." A brief notice of subcapsulo-periosteal resections, and of osteo-plasty by displacement of periosteal flaps, in similar terms, concludes this chapter.

The fifth chapter—on general conclusions—is a short but very powerful one. In a series of short sentences, M. Sédillot reiterates his views as to the pathology of the reproduction of bone, and again insists on the merits of his own method of treatment. He begins by referring the true source of bone to cellular elements which, in unequal proportions, are to be found: 1. In the external layer of bone immediately below the periosteum; 2. In the marrow lodged in the medullary canal; 3. In the bone itself. In the first of these seats the cells are very abundant, and ossification goes on with great rapidity; hence the necessity for its most careful preservation. Tracing the changes in any given case, the earliest is the disappearance of the marrow itself, and of the remains of the old bone, leaving room for the proliferation of the cells in the neighbourhood. For this proliferation, both epiphyses and diaphysis (in évidement) form suitable moulds, to guide its growth. Then come changes in which the external layers of bone unite with the "osseous deposits" formed by and amidst the proliferating cells; the Haversian canals of each and all become continuous; the mass becomes homogeneous. (These changes are very well shown in figs. 1, 2, 3.) Then, lastly, the medullary canal, which had been obliterated, is reproduced, and the bone is really regenerated in size, appearance, and function. A single sentence may be quoted here, as an example of the fresh, emphatic manner in which M. Sédillot often states a question, or propounds a generalization, so as to clear truth from the mist of words in which she is too apt to lurk, and so bring it out with clearness and point.

> "It is possible, histologically, to separate diseases into two classes: those which do, and those which do not, stimulate reproduction or restoration of the affected organs. Simple inflammations, wounds, etc., belong to the first division; ulceration, caries, malignant pustule, etc., to the second. In the latter, the *nisus formativus* is absent or abortive, and the maladies tend to increase."

In the next few pages, "évidement" and subperiosteal resections are again compared and contrasted, with the old results.

Chapter VI., the last, consists of a collection of papers by M. Sédillot himself, and others, bearing upon the question of évidement. We have no space even to mention them, nor is it necessary. Many are mere repetitions, in other words, of what is contained in the earlier chapters. The most interesting are: A paper by Dr Eissen, on "Évidement," and one by Dr Boeckel, in which he discusses the question of subperiosteal resections of the calcaneum, and describes the results gained in his own practice and that of Professor Rigaud.

So far for an analysis of this important contribution to the Surgery of the age. With many faults, bad arrangement, frequent repetition, sometimes dogmatic, occasionally overweening, no one can read it without rising from its perusal with the conviction that the author is a man of immense power, full of zeal for science, and deeply imbued with love for his profession. From the fire and energy of its style, and still more from the hope which the author ardently entertains, that by argument he may possibly convince opponents and win them over to his opinion, it is like the work of a man still young. But when we recall to mind that nearly forty years have passed since M. Sédillot first began to set his mark on Surgery; that this great original work is written by one who, full of years and honours, not only conducts a large private practice, but is Professor of Clinical Surgery, and Director of an Imperial Military School; we find an explanation of defective arrangement and repetitions, we no longer wonder at dogmatic *ex cathedra* statements, and can only admire the freshness and vigour of the man, and express a hope that he may long continue an ornament to his profession and his country.

St George's Hospital Reports. Edited by JOHN W. OGLE, M.D., F.R.C.P., and TIMOTHY HOLMES, F.R.C.S. Vol. I. London: John Churchill and Sons: 1866.

IT has long been the practice at Guy's and some of the other London hospitals, to issue annually a volume of reports, giving an account of the work done during the year; and we are glad to see that the staff at St George's have determined to do the same. This, their first volume, is in every sense worthy of the distinguished men attached to that institution, and contains some most valuable contributions to the science of Medicine and Surgery. The book is indeed most creditably got up, and reflects the greatest praise, not only on the gentlemen so well known to the profession who have undertaken the duty of editing it, but on the publishers also, who have executed their part of the work most handsomely. As explained in the preface by Dr Ogle and Mr Holmes, it is intended to continue the issue of a series of reports every year, and although the chief design of the work is to register the experience attained within the hospital, the editors, nevertheless, anticipate co-operation from former students not now resident in London.

The first article is from the pen of Dr Page, the Senior Physician to the Hospital, and forms a most appropriate opening to the volume, as it gives an interesting historical sketch of St George's Hospital and School of Medicine, with a classified list of the physicians and surgeons from its foundation in the year 1733–34. The papers which follow are chiefly of a practical nature, and some of them are accompanied by very accurately drawn and graphic illustrations. Mr Holmes contributes three articles: one, a case of Meningocele, in the occipital region, which was injected with iodine without ill consequences; one, on Amputation at the Hip-Joint, for recurrent fibro-plastic tumour, and in morbus coxarius; and one, on Amputations, showing the influence of age on the results of amputation, and pointing out the causes of death after operation. Mr Holmes is of opinion, that in many of the worst forms of diseased hip-joint, recourse may be had to amputation with the most successful results, even where the acetabulum is extensively involved; and he mentions cases in which the operation was followed by recovery. Dr Ogle's contributions are two in number; the first being on Disease of the Brain as a result of Diabetes Mellitus; the second on the Diurnal Variations in the Temperature of the Human Body in Health. At the present time, when so much attention is being paid in most of our hospitals to the thermometry of disease, Dr Ogle's paper on the Temperature of the Body in Health is particularly interesting. Hitherto the only extensive series of experiments with which we were acquainted were those of Dr John Davy, and in most of our physiological text-books he is quoted as an authority. Dr Ogle, however, points out that Davy's calculations are quite erroneous and not to be relied on: his chief error consisting in striking his averages too low. From an extensive and most carefully conducted series of observations, Dr Ogle draws the following conclusions:—

"The lowest temperature of the body occurs about daybreak. At this time a rise begins, which continues till late in the afternoon, reaching its maximum at different hours in different persons. The maximum reached, the temperature again falls. The fall is at first slow, but becomes more rapid after 9 or 10 o'clock, and this fall continues till daybreak or thereabouts, when the cycle begins again. The average variation in the course of twenty-four hours is about 1½° Fahr." His observation on the effect of alcohol is interesting. "Alcohol (or rather claret)," he says "causes an immediate rapid fall. But this effect is temporary; and a reaction ensues, by which the temperature is carried to as high a point, or even higher than it would have reached had no alcohol been taken. Tea, on the other hand, causes an elevation of temperature."

Mr Prescott Hewett furnishes an essay on the Deviations of the Base of the Skull in Chronic Hydrocephalus. Dr R. E. Thomson writes on Typhus, and Dr Allbutt on the same subject; and Mr Lockhart Clarke, whose observations are always valuable, has a paper on Progressive Locomotor Ataxy. After giving a concise but very perfect description of the symptoms of this interesting malady, he gives the history of a series of original cases illustrative of the various forms of the disease. We commend this most excellent paper to all who wish to make themselves familar with the symptoms, the diagnosis, and the treatment of ataxy.

Dr Bence Jones writes on Jaundice and Biliousness; a subject on which the majority of medical men entertain very vague and uncertain ideas. Scarcely a day passes without bringing under the notice of the practitioner a patient who is suffering from the well-known but imperfectly understood derangement called biliousness; yet it must be confessed that the pathology of this state has not received that attention which it deserves. Dr Jones believes that it is caused, not as is commonly supposed by the suppression or defective elimination of the constituents of the bile from the blood, but by the diffusion of bile through the walls of the gall-bladder into the blood.

"In the healthy state," he observes, "the diffusion of bile from the gall-bladder into the blood rises from nothing to a maximum which is reached when the gall-bladder is distended to the uttermost, and the longer the gall-bladder remains distended, the greater is the amount of bile that passes into the blood.

"The gall-bladder remains long distended when for many hours no food is taken; or when no food passes out of the stomach; or when opium is taken, which stops any motion of the duodenum; or where catarrhal inflammation of the duodenum exists; then without any mechanical obstruction at the orifice of the common duct, the gall-bladder remains full of bile, and jaundice very commonly is produced. The gall-bladder is emptied when solid food or irritating medicines pass through the duodenum; and the stronger the irritant, the more completely the gall-bladder empties itself. Even violent irritation of the stomach is propagated to the duodenum and causes the escape of bile from the gall-bladder, as is seen in the action of strong emetics. It follows from these facts, that diffusion of bile may be lessened by giving frequent emetics, or by those active purgatives which act on the duodenum strongly; and to get the maximum effect, that is to reduce the diffusion to a minimum, irritants should be so given as to prevent the gall-bladder from becoming full."

Another interesting communication, by Mr C. Hunter, on the Modus Operandi of Hypodermic Injections, discusses the question as to whether the injection should be made over the seat of pain or at a distance from it. And Mr Hunter, who has practised the hypodermic plan very largely, holds that localization of the injection to the neighbourhood of the painful nerve is neither necessary nor superior to the distant injection. Thus he has frequently, he states, cured facial neuralgia and sciatica by making the injection into the cellular tissue of the arm.

There are other papers of equal merit and interest which we cannot find space to notice, and would merely direct attention to the valuable reports of the medical and surgical cases treated at the hospital during the year, with which the volume concludes.

We congratulate St George's and its staff on the production of such an interesting work, and hope that this, the first volume which has appeared, may be followed by a long series equally attractive and meritorious.

In conclusion, we would take the liberty of suggesting that Edinburgh should follow the example of London in the publication of hospital reports. Surely the experience of a single year in the wards of our own Infirmary yields abundant material for the formation of such a work as we have just been noticing, and we all know how much that is worthy of being preserved and published is annually lost, or at all events never sees the light.

Recherches sur les Altérations des Artères à la suite de la Ligature. Par TH. COCTEAU, Docteur en Médecine, Prosecteur des Hôpitaux, Ancien Interne (lauréat) des Hôpitaux de Paris, etc., etc. Pp. 77. Paris: J.-B. Baillière et fils: 1867.—[Researches on the Alterations in Arteries after Ligature. By TH. COCTEAU, M.D., etc., etc.]

WITHOUT being able to boast of much original materials or many new discoveries, Dr Cocteau has, in this little brochure, given a very fair account of the changes which occur in the artery, and in the neighbourhood, after the separation of a ligature. After a very brief and bald historical notice of the literature of the subject, he discusses it in five chapters. In the first, which is very short, on the immediate results of the ligature, he mentions that M. Desormeaux has lately been using iron threads to secure the smaller arteries in amputations. The second is devoted to the subject of the coagulum, its size, and mode of formation. Dr Cocteau seems to think that, in those cases of purulent infection where, on examination, no clot is found in the usual place, its absence is caused by non-deposition, instead of the more common idea, that it has been removed by a process of re-absorption or, rather, disintegration. Chapter III. treats of the cicatrization of arteries after ligature. In Chapter IV., on the changes in the coats of the artery and in the coagulum, some interesting experiments, by Levret, on animals are quoted, to prove the well-known fact that metallic ligatures may be encysted in the tissues without exciting inflammation. The last chapter describes some of the chief accidents which may follow ligature of a vessel. Under the head of injury to the vein, two remarkable cases are quoted, in both of which the femoral vein was cut and tied during the operation of tying the femoral artery, and both of which recovered without gangrene or even œdema of the limbs. Had this little work contained a few illustrations, with references, much time might have been saved in the descriptions, and it would certainly be more useful to any one previously unacquainted with the subject.

Part Third.

PERISCOPE.

PATHOLOGY.

ON EPILEPSIA SATURNINA AND ITS RELATIONS TO URÆMIA.
BY DR ROSENSTEIN OF GRONINGEN.

THE author sums up his results as follows:—

1. Chronic lead poisoning neither induces albuminuria nor marked anatomical changes in the kidney.

2. Lead poisoning proves fatal in many cases by epileptic attacks, which losely resemble those of uræmia. The resemblance is increased by the fact, that amaurosis occasionally occurs, and the urine is diminished in both. In animals which died in this way, lead was discovered in the brain.

3. Diminution of urine is merely an accompaniment, not a cause, of the head symptoms; the cause is anæmia of the brain.

4. If all cases of severe nervous affections with diminished flow of urine are to be called uræmic, this may. The amaurosis is unaccompanied by any recognisable anatomical change.

5. It is not yet certain whether the separation of bile pigment by the urine is constant or not.—*Virchow's Archiv*, May.

A LARGE ADENOMA OF THE LIVER. BY PROF. HOFFMANN, BASLE.

FOUNDING upon an individual case of adenoma of liver recently observed, the author seeks to establish the existence of four groups:—

1. Congenital tumours of liver structure, some of which are quite apart from the organ, *e.g.*, in the suspensory ligament, others separated from the rest of the mass only by a layer of connective tissue.

2. New formations of hepatic structure formed in the liver during life. To which class his own case belongs.

3. Glandular structures occurring in the liver substance, but of a structure somewhat different from that of the rest of the organ.

4. Tumours which arise by partial degeneration of the liver.—*Virchow's Archiv*, June.

CLOSURE OF THE BILE PASSAGES BY THICKENING OF THEIR WALLS.
BY PROF. HOFFMANN.

UNDER this title, Prof. Hoffmann describes three cases in which, from long-standing and severe catarrh of the intestine, permanent occlusion of the bile passages took place, and he points out the clinical importance of the different seats in which this may occur, viz., the cystic duct, the hepatic duct, or the ductus communis choledochus.—*Virchow's Archiv*, June.

ON THE FORMATION OF UNSTRIPED MUSCULAR FIBRE IN PLEURITIC MEMBRANES.
BY PROF. JULIUS ARNOLD, HEIDELBERG.

THE points which the author brings out are summarized as follows:—In the recorded case of sacculated empyæma, such a quantity of unstriped muscular fibre had been produced, that it formed a continuous muscular covering for the lung, of considerable thickness.

The formation of the muscular fibre took place from the rounded cells, which, by gradual metamorphosis, underwent the change into contractile fibre cells.

The layer of formation cells lay mostly towards the inside; on its outer surface the layer of young, imperfectly formed, and outside of that again the fully formed, muscular fibres. Numerous transition forms also existed.—*Virchow's Archiv*, June.

ON THE FORMATION OF STRIPED MUSCULAR FIBRE, PARTICULARLY ITS REPRODUCTION AFTER INJURIES. BY PROF. OTTO WEBER, HEIDELBERG.

THE author, in an elaborate paper on this subject, gives an account of the views of various authors. He remarks, with regard to the unstriped muscular fibre, that it is established beyond doubt that it may be developed from connective tissue; and that, on the other hand, undeniable transitions from it to striped muscular fibres occur. But the paper is mainly devoted to the question of the reproduction of striped muscular fibre. The old idea, that a muscle when cut through becomes joined only by fibrous tissue is incorrect; and, as a rule, individual muscular fibres run through the fibrous part. To determine the mode of this production, Weber made experiments on rabbits, dogs, cats, and on the human subject. Of the results of these experiments, he describes :—

1. *Changes in the old Muscular Fasciculi after injury.*—These consist of contraction of the sarcolemma to points or cones at the point of section, and irregular contraction; sometimes transverse splitting of muscular tissue. The transverse striæ soon begin to disappear, and the mass assumes a peculiar glance—a sort of waxy look. In the spaces between the protoplasm thus altered, young cells appear, and become by degrees more prominent and numerous. These are products of the corpuscles (the so-called nuclei) of the muscles. Their formation commences very soon after injury, and steadily becomes more distinct; but their number varies in different muscles. In connexion with these cells while still within the sarcolemma, agglomeration of protoplasm takes place; and this protoplasm, gradually assuming transverse striation, forms new muscle.

2. *Changes between the original Muscular Fasciculi.*—The author maintains that in the nuclei of the sarcolemma a certain enlargement takes place, and that frequently pus is formed in them. The same is true of the connective tissue corpuscles which accompany the vessels and nerves. Between the fasciculi, after the second day, young muscle cells are visible; and while Weber thinks that this may be in some cases accidental (from escape of the muscular cells during manipulation of the preparation), he maintains that the typical mode of production is from the cells of the muscles; at the same time he admits that it is not possible at present to prove that they do not in some cases proceed from connective tissue corpuscles.

The time required for the perfect development of young cells into muscular fibres, Weber found to be from three to four weeks.—*Virchow's Archiv*, June.

ON THE PARTICIPATION OF THE MUSCULAR NUCLEI AND THE STRIPED MUSCULAR FIBRES IN NEW FORMATIONS; WITH REMARKS ON THE DOCTRINE OF THE SPECIFICITY OF THE TISSUE ELEMENTS. BY PROF. OTTO WEBER.

IN this paper, Prof. Weber points out that in suppuration, sarcoma, and in scirrhous and epithelial cancer, the formation takes place from the same elements, viz., the nuclei of the muscles. His inquiries in connexion with this subject, he thinks, strongly support the opinion of Virchow, which implies that most new formations have a stage in which the young cells possess no specific peculiarities, these appearing only as development advances.—*Virchow's Archiv*, June.

SURGERY.

OSSEOUS TUMOUR OF THE ANTRUM.

M. DEMARQUAY records a case which, pathologically, he believes to be almost unique. A man, aged 53, had had a swelling in his left cheek for twenty years. This for long was only a deformity, but during the last six or seven months had been discharging a large quantity of pus through fistulous openings into the mouth. Three teeth had been extracted at different times for neuralgic symptoms, and through the orifices left by their extraction pus also escapes. The vault of the palate was also pierced with fistulæ, and the nostril of the affected side was almost occluded. General health excellent.

The difficulty of diagnosis was great; but in the hope that all the symptoms depended on the existence of a sequestrum, M. Demarquay attempted to remove it. This was found to be impossible, and the whole jaw was at once excised in the usual manner. With the exception of one attack of secondary hæmorrhage, nothing interfered with a rapid cure.

The jaw, on section, showed that the antrum had been much expanded in every direction, and contained a white tumour which almost filled it, yet was not adherent to its walls at any point. This tumour felt in some parts fibrous, in others osseous, and under the microscope showed only fibrous tissue, which contained numerous large masses of calcareous material, which were strongly refractive. What was this originally? An exostosis which has necrosed? or, more likely, a tumour originally fibrous, in which lime has been gradually deposited? This latter M. Demarquay believes to be the most probable hypothesis. Another question is, how was the necrosis caused? By the increasing density of the tissue causing gradual destruction of the nutrient vessels? Or was it by the pressure which the central part of the tumour had to undergo when further dilatation was prevented?—Abridged from the *Gazette Médicale* of 20th April 1867.

FISSURE OF ANUS.

As an illustration of the exceeding slowness of surgical progress, a long discussion at the Société de Médecine de Paris may be noticed. Injections of decoctions of rhatany; lotions of sulphate of copper; forced dilatation by two, three, or four fingers are all gravely discussed, and by only one speaker is the simple division of the base of the fissure even alluded to.—*Gazette des Hôpitaux*, 23d March 1867.

TREATMENT OF GONORRHŒAL OPHTHALMIA BY ALCOHOLIC INJECTIONS.

M. Gosselin, at La Pitié, treats gonorrhœal ophthalmia by the use of frequent injections (by a syringe) of a mixture of two parts of alcohol to one part of water. This was used every two hours for two days with good effect. On the third day the injections were required only at intervals of four hours. On the fifth day, three daily sufficed. On the seventh, redness was nearly gone, suppuration had ceased, and an ordinary wash of sulphate of zinc and laudanum was sufficient to complete the cure.—*Gazette des Hôpitaux*, January 12, 1867

REMOVAL OF A CANCEROUS EYEBALL FROM A CHILD AGED TWO DAYS.

BY DR LEONARDO GONZALEZ PEREZ.

The reporter was sent for to see a new-born infant, whose right eye, enormously prominent, projected beyond the lids. The cornea was black, and resembled cartilage; the lower border of the globe was on the level of the anterior nares and the upper of the eyebrow. The infant seemed to suffer the most intense pain, and cried without ceasing. Three leeches were applied to the lower lid, and soothing lotions were ordered.

Next day the child seemed worse, did not take the breast, and the eye projected more and more. The eye was removed next day, an incision having been made at the outer commissure. There was little hæmorrhage; the child did not suffer much, as it fainted as the operation was begun. Soon after coming out of the faint it fell asleep; the same day took the breast, and cried no more. There was little inflammation or suppuration, and in a fortnight the cure was complete.

After quoting the above from a Spanish journal—Il Genio Quirurgico—the translator, Dr Henri Almes, observes: "The case is certainly an interesting one; but was it really a cancer of the eyeball? We have not sufficient pathological and microscopic proofs of this; and the rapid cure and subsequent excellent state of health are rather against it." The future history of the case will prove an important element in verifying or disproving the diagnosis; but certainly the case is curious from the early date of the operation.—*Gazette Médicale de Paris*, 2d March 1867.

REUNION OF PARTS SEPARATED FROM THE BODY.

A FARRIER, while shaving a horse's hoof, cut off a piece as large as a penny from the ball of his thumb. It fell to the ground, fortunately with the skin downwards, was at once stuck on, and reunited so well, that in a few weeks only a narrow circular scar remained to tell of the accident.

A miller's boy fell under the hoofs of one of his horses. The hoof struck him on the face, and cut off his nose, in such a manner that, completely separated at its root and along the edges, even down to the mucous membrane of the upper lip, it hung in front of his mouth, turned upside down. Prof. Michaux washed and dressed it. It united so well, that in three weeks the lad was again at his work, and the scar was hardly noticeable.—*Gazette des Hôpitaux*, 20th April 1867.

Part Fourth.

MEDICAL NEWS.

INTERNATIONAL MEDICAL CONGRESS OF PARIS.

THIS Congress met in Paris on 16th August, and was ably presided over by the distinguished Professor Bouillaud. It was very numerously attended, upwards of seven hundred members being enrolled, so that the large amphitheatre of the Ecole de Médecine, in which the Congress was held, and which was decorated for the occasion with groups of the flags of all nations, was always well filled, and sometimes, during the more exciting debates, crowded. Several Governments sent official delegates: Bavaria being represented by Professor Seitz of Munich; Belgium, by Professor Crocq of Brussels; France, by Professor Denonvilliers of Paris; Portugal, by Professor Barbosa of Lisbon; Prussia, by Professor Frerichs of Berlin. The learned Societies in various parts of Europe and America also sent representatives. The honorary members included the Ministers of Public Instruction of France, Russia, and Prussia; the Ministers of the Interior of Belgium, Holland, and Portugal; and the Count d'Avila, Vice-President of the Academy of Sciences of Lisbon. The foreign Vice-Presidents appointed by the Congress were—Virchow (Berlin), Halla (Prague), Lambi (Karkoff), De Méric (London), Palasciano (Naples), Wleminex (Brussels); and the French Vice-Presidents consisted of Professors Bérard (Montpellier), Gintrac (Bordeaux), Baron Larrey (Paris), Ricord (Paris), Roux (Toulon), and Tessier (Lyons). Dr Jaccoud officiated as General Secretary, Dr Vidal as Treasurer, and Drs Ball, Bricheteau, Cornil, Desnos, H. Gintrac, and Proust acted as Special Secretaries, and kept the minutes of the proceedings. While medical men, many of them the most distinguished, from the different Continental States attended the Congress in considerable numbers, it is to be regretted that British Medicine and Surgery were very sparingly represented. This was to some extent due to the fact that the meetings of the British Medical Association and of the British Association, which took place, the one at the beginning and the other at the end of August, necessarily prevented some of our most eminent physicians and surgeons from undertaking the journey to Paris.

The meetings of the International Congress, commencing on Friday, 16th August, were continued alternately on the afternoon and evening of every day (except Sunday) till Wednesday the 28th, when the Congress was formally closed. The proceedings consisted of the reading of papers, and of the discussions which followed. A printed programme contained the titles of the papers to be read at each meeting, so that the business to be transacted was fixed beforehand; and the arrangements of the programme were strictly adhered to, though not without considerable difficulty. At the morning sittings, the memoirs relating to the questions proposed by the committee which had originated the Congress, were heard and discussed; while the evening sittings were reserved for papers treating of various subjects selected by the authors. Ordinarily, all or most of the papers treating of the same subject were first read, and then the discussion followed. Members desiring to take part in the debate had to send their names to the President, who called upon each speaker in his turn to come forward to the platform. In consequence of this arrangement, which was perhaps necessary in so numerous an assembly, the speeches consisted often of a series of formal addresses or lectures, rather than of what is usually considered discussion. An incident which occurred at an early meeting broke in upon the monotony of the proceedings. A Dutch physician, Dr Van Loo, who did not relish being subjected to continual lectures and addresses, rose from his seat and proposed that an International Congress, to deserve the name, ought not to be occupied with mere lectures on scientific subjects, but should discuss the position of medical men in the different countries of Europe, with the view of elevating their status, and removing the numerous restrictions which prevented medical men of one country from practising in another. This suggestion was received with acclamation; but, being out of the order of the programme, there was much difficulty in disposing of it. Ultimately, a portion of an evening sitting was set apart for considering Dr Van Loo's proposition, and a discussion of considerable interest took place on the occasion. If the earlier debates, however, were somewhat monotonous, no such fault could be found with the later ones. The discussion on the contagion of cholera was a very animated one; but the question of the prophylaxis of syphilis, which drew Ricord and Auzias-Turenne to the front, raised the energy and eloquence of the controversialists to the highest pitch of excitement. It reflects much credit on M. Bouillaud to have preserved order in a prolonged debate that threatened more than once to end in tumult and uproar. Happily the storm subsided, and the Congress successfully completed it programme.

It would be impossible, within the limits to which we must confine this notice, to give any detailed account of the memoirs or of the discussions. When the transactions of the Congress are published, we may have occasion for a more minute examination of them. For the present, it is enough to state that many of the papers were very able, and that the debates were marked by great vigour and ability. But the questions proposed for discussion, although of surpassing and universal importance, were not of a nature to admit of definitive conclusions. The first question,—"On the Pathological Anatomy and Physiology of Tubercle,"—elicited fully the more recent views on the subject. The distinction of the gray granulation or tubercle from the yellow or caseous deposit (the now-called localized caseous pneumonia); the origin of tubercle by proliferation of the connective-tissue cells, and, according to some, also of epithelial cells; the formation of tubercle in the outer investments or lymphoid sheaths of arteries; the similarity of tubercle in its mode of production to the results of simple inflammation, the inoculability of tubercle, etc., were described and discussed by Villemin, Crocq, Lebert, Empis, Hérard, Cornil, Friedreich, and others. The origin of tubercle by proliferation from normal cells seemed to be everywhere accepted. The second part of the question, relating to the prevalence of tubercle in different countries, and its influence on the general mortality, was illustrated by several statistical papers, which were not, of course, fitted for being read at length nor for discussion. On the subject of the treatment of tubercle, nothing new or striking was brought forward. The second question, "On the Influence of Climate, Race, and Mode of Life on Menstruation in different Countries," after forming the subject of several able papers, was expected to give rise to an important debate, which unfortunately, owing to want of time, did not take place. One of the most important questions, "The Causes of Death after Surgical Operations," was the occasion of a very candid and able statement by Professor Gosselin in regard to the high mortality of surgical operations in the Parisian hospitals, and the means he had used, with considerable success, to diminish it by ventilation, separation of cases of erysipelas, etc. Upon this, Dr De Méric of London drew attention to the hygienic arrangements of English hospitals (from which M. Gosselin acknowledged that he had received the idea of the improvements he had introduced), and referred especially to the successful results in ovariotomy. Dr De Méric possessing a perfect command of French, joined with the English free manner of debate, made a most favourable impression on the audience. Several interesting communications by Verneuil, Marjolin, and others took up various points of the same subject, and introduced the question of hospital construction and management, in regard to which it appears that the French Government pays but little attention to the wishes or advice of the medical bodies. Dr Bourgade (of Clermont-Ferrand) professed to have met with extraordinary success by the application of perchloride of iron to the wound immediately after the operation; and to his paper the Congress awarded the gold medal which had been offered by the Congress of Bordeaux.

We have already alluded to the discussion on syphilis. The question was, "Whether it were possible to propose to the different Governments efficacious measures for limiting the Propagation of Venereal Disease?" Details were given of the various restrictive regulations adopted in Belgium and France, with their effects on the spread of venereal disease, and their influence on the number of "regulation" and of clandestine prostitutes. The latter class are the great source of difficulty; their number tends to increase, while that of the legalized prostitutes diminishes, whenever restrictive measures are strictly enforced. In the keen discussion on Syphilization, the general opinion was strongly adverse to it. On the motion of Professor Béhier, a committee was named for the purpose of summarizing the views expressed at the Congress, and of bringing their recommendations prominently before the different Governments. This has been the principal practical result of the Congress.

The remaining questions, "On the Acclimatization of European Races in Warm Countries;" "On the Influence of Alimentation in producing certain Diseases in different Countries" (under which head the subject of pellagra was particularly noticed); and "On Entozoa and Entophyta in Man;" did not present the same general interest as the previous parts of the programme, and although ably treated, did not give rise to important discussion.

Even in this short notice, we should not omit to mention the interesting communications of Dr Polli of Milan, on the use of sulphites in the treatment of zymotic diseases; and of Dr Lombard of Geneva, on the influence of malarial poison on the mortality of different countries in Europe, and also on the effects of altitude above the sea level in the diminution or cure of phthisis pulmonalis. Dr Brunetti's account of his method of preserving anatomical tissues and organs (of which excellent specimens are exhibited at the Exposition), was listened to with much attention. His preparations are perfectly clean and dry, and extremely light (all the water being expelled); they seem capable of indefinite preservation; and are said to retain the minute microscopical structure; they are a colourless mummification of the textures, and although they do not dispense with the study of the natural soft parts, they may be of great use subsidiarily. Perhaps the greatest novelty at the Congress was the proposal of Dr Milliot of Kiew, to render the walls of the cavities of the body transparent by inserting a glass tube containing platina wire, which could be made luminous by the galvanic current, into the interior of the body,—*e.g.*, per œsophagum, anum, vaginam, etc. The proposal, which is an extension of Professor Fonssagrive's method of illuminating the fauces, is ingenious, and the author has partially succeeded in demonstrating on animals the possibility of accomplishing it. The difficulties of its application, however, appear for the present to render the plan impracticable.

From this rapid sketch of the proceedings, it will be seen that the Congress had accomplished its work. It is not to be overlooked that the difficulties of an International Congress are very great. There is a diversity of language, ideas, social habits. Foreigners necessarily appear at a great disadvantage in expressing their thoughts in an unfamiliar tongue—a disadvantage which no indulgence on the part of the audience (and that is largely conceded) can overcome. In Paris also, where a Congress is comparatively a new institution, there were, with the exception of the Congress Banquet in the Grand Hôtel, none of those social arrangements for the accommodation, mutual introduction, and entertainment of visitors, which we should have expected, and to which British Association meetings owe much of their attraction. The hospitals and other public Medical Institutions were not turned to proper account, the chief officials being *en vacance*. Several of the leading medical men and professors in Paris seem to have looked on the Congress with distrust, and to have withheld from it that support which it deserved at their hands. Nevertheless, the possibility of a great international medical assembly has been fully realized, and with remarkable success. At the final meeting, the Italians claimed to hold the next International Medical Congress in Italy in 1869, at some town to be afterwards named—(a statement which was received with cries of "Rome!" "Rome!" and cheers.) May their efforts prosper! Medicine is essentially international: its progress is for the benefit of all mankind.

VELPEAU AND RAYER.

THE two men who have for many years past been at the head respectively of Surgical and Medical practice in France, have died within a month of each other. Professor VELPEAU's death was announced, on the 24th August, during the sittings of the International Medical Congress of Paris, the members of which attended the funeral. Velpeau's career was a very remarkable one. Born in 1795, the son of a village blacksmith, he became, when a lad, an in-patient of the Hospital of Tours, where, by his care of his fellow-patients, he attracted the attention of the celebrated Bretonneau, who encouraged his desire to become a "doctor." Velpeau had at that time to acquire the very elements of education; but, notwithstanding, he soon succeeded in obtaining the grade of *Officier de Santé*. On a visit to Paris, he formed the ambitious resolution of settling there. Amid great privations, he contrived to support himself by teaching his fellow-students till he obtained the appointment of Demonstrator of Anatomy to the Faculty. He now rapidly obtained his Doctor's degree, and became successively Surgeon to the Hospitals and Professor Agrégé. After competing, with immense labour, for various professorships at five different *concours*, Velpeau was at last, in 1835, appointed to the chair of Clinical Surgery at La Charité. He was elected to the Academy of Medicine (1833), and to that of Sciences (1843). His reputation was now made; the celebrity of his Clinique spread all over Europe. For the last twenty years he has been the principal surgeon in France. His practice was immense, and he has left a large fortune.

His principal works, besides his Treatise on Accouchments and on Embryology, which he published when competing for the chair of Midwifery, were his Surgical Anatomy, his Operative Surgery, and his Treatise on Diseases of the Breast, which was translated by the Sydenham Society in 1856. Velpeau was chiefly distinguished for his truthfulness, his strong and clear judgment, his profound knowledge of surgical anatomy and pathology, his accuracy in diagnosis, and his vast clinical experience. He possessed great activity, energy, and perseverance; always punctual at his hospital visit and lectures, he was occupied with his professorial duties and his practice to the last. He had been suffering for some time from disease of the prostate, but still appeared strong and vigorous. He was cut off, after three days' illness, at the age of 72; the last words he uttered were characteristic,—"*Travaillons toujours*."

RAYER was born in 1793, and took his Doctor's degree in 1818. In consequence, it is said, of his marriage with a Protestant, he was excluded from a university career. He was appointed, however, to the Hospital St Antoine, and afterwards to La Charité. His great reputation rests (not to mention his work on Skin Diseases) on his well-known Treatise on Diseases of the Kidney, which contains his valuable researches on Bright's Disease. Rayer acquired an extensive and very lucrative practice amongst the higher classes in France, and was physician to the Emperor. He is said to have left a fortune of about £400,000 sterling. One of Rayer's chief titles to distinction is derived from his devotion to the progress of medical science. In 1849 he founded the Biological Society, which Bernard and Brown-Sequard, Robin, Lebert, and others have illustrated by their discoveries. He drew attention to the importance for a physician of a knowledge of the diseases of animals, and a few years ago, by the influence of the Government, a chair of Comparative Pathology was created for him at the Ecole de Médecine; he published an introductory address, but never lectured. He was at the same time made Dean of the Faculty of Medicine, but encountered so much opposition, in consequence of what was regarded as Government intrusion, that he resigned after two years.

Rayer was member of the Academy of Medicine (1823) and of the Academy of Sciences, and he was the founder and president of the General Medical Association of France, which was established for protecting the interests of the profession, granting assistance to the unsuccessful, and providing pensions for widows and children in cases of need. He died on September 10, of an attack of apoplexy. The funeral ceremonies were unusually splendid.

DISINFECTANT TREATMENT OF YELLOW FEVER BY MEANS OF SULPHUROUS ACID,

By Dr Alexander Fiddes, F.R.C.S.E., of Jamaica.

The following extracts from the Jamaica newspaper, "The Gleaner," published at Kingston, appear to indicate a successful application of the anti-zymotic treatment to cases of yellow fever during the recent epidemic in that island. The subject is a very important one, and the results arrived at deserve attention. In a leading article in "The Gleaner" of 9th July, we read:—

"In dealing with yellow fever, which is universally admitted to be a most deadly and fatal complaint, it is satisfactory to know that there are certain curative agencies which hold out a better hope of recovery than those hitherto in use, and we are happy to announce that these have been tried with the best results in the fever with which we have been recently visited. The remedy or treatment we allude to consists in the internal administration of sulphurous acid, combined with the external application of iced sheets around the body when the skin is hot and dry, or with an occasional vapour-bath when the skin is dry without being very hot. During the late prevalence of yellow fever this treatment succeeded better than any other in curing the disease, and was attended by an amount of success forming a remarkable contrast to what had been obtained before.

"Calomel, quinine, and all other medicines are set aside, as being not only useless, but positively injurious; the only medicine recommended being a full dose of castor-oil at the beginning of the disease.

"The use of the sulphurous acid and the application of the wet sheets or vapour-bath, are indicated as much by the dictates of theory as by the lessons of experience. The first is a preventive remedy against fermentation of the blood; the two latter are potent agencies for withdrawing or abstracting poisonous matter from the body, without weakening the vital powers. Since Professor Polli of Milan instituted his elaborate series of experiments to test the efficacy of sulphurous acid in arresting fermentation in the blood of animal bodies, and since Dr De Ricci of Dublin, and Professor Burggraeve of Ghent, repeated the same, the therapeutical power of this medicine has been well known to the medical profession; but we believe that Dr Alexander Fiddes, F.R.C.S.E., practising in this island, is entitled to the credit of having introduced it as a remedial agent in yellow fever, and we understand that every confidence is placed in it, not only in this complaint, but in several others of the large family of zymotic diseases. The sulphurous acid is not given in its pure form, but combined with an alkaline base, such as the bisulphite of soda, the sulphite of magnesia, or of potash, or of ammonia, of which the former preparation is probably the best, being tasteless, and not likely to offend the stomach. The dose is 20 grains every two or three hours in a glass of water."

In the same newspaper, of date 24th August, is a letter from Dr Fiddes, from which we extract the following:—

"I am more and more convinced that the use of the sulphurous acid (given in the form of the sulphite of magnesia or of soda), and the adoption of the vapour-bath or the iced sheets, as an envelope of the body when heat and dryness of the skin require them, is the most rational plan of treatment which has hitherto been devised for the successful management of this formidable disease. This remedial method has succeeded better in my own hands than any other I have used before, or seen practised by others, and I can speak from a very considerable experience; but the treatment, to be efficacious, must be vigorously and systematically carried out from the first appearance of the disease to its termination, and, above all, the medicine should not be mixed or jumbled up with other therapeutical agents, and particularly with those which might counteract or neutralize its antiseptic action.

"The great object to be obtained by the use of the sulphurous acid is the arrestment of fermentation of the blood, which the yellow-fever poison, whatever that may be, has a strong tendency to produce, by fixing on and establishing a chemical affinity with certain elements existing in unacclimated blood, and so leading to its disintegration and dissolution; and this septic process is probably effected in the same way that yeast or any other ferment multiplies and reproduces itself when thrown into a material substance favourable to its operation. To arrest and stop this zymotic or fermenting action, no agent has yet been discovered which possesses power equal to sulphurous acid, and this fact has been fully ascertained by the elaborate and carefully conducted experiments of several eminent medical men in Europe, and there can be no doubt whatever that it is the medicine rationally indicated in the treatment of yellow fever; but to give the remedy fair play, the character of the disease must be diagnosed early, and when that is done, the sulphite must be given immediately, and administered in full doses with great punctuality—20 grains every two or three hours, so as to ensure and maintain full saturation of the blood. Any nibbling with the medicine by giving it in insufficient doses, or at prolonged intervals, would probably end in failure.

"I regret that I am unable, as yet, to furnish full and complete statistical data of the real and actual results of the sulphite treatment of yellow fever: I have applied for the necessary information at the proper quarters, and as soon as I may be supplied with it, will lay it before the profession and the public. In the meantime, I may mention the fact that the late epidemic of yellow fever at Newcastle has been attended by a rate of mortality 24 per cent. under that which happened there in the year 1856. In that year yellow fever broke out among the soldiers of the 36th Regiment, commencing on the 20th of September, and terminating on 23d December—that regiment arrived here in H.M.S. Resistance, on the 14th September 1854, direct from Barbadoes, where it had been stationed between two and three years, during which time it is reasonable to suppose that the corps underwent an acclimatizing process; it had, moreover, the benefit of a two years' residence in this island before yellow fever appeared amongst the soldiers at Newcastle. It seems fair to infer that the four and a half years' usage or seasoning to a tropical climate with which this regiment had been favoured, should have led to its protection against yellow fever, or at any rate, that this favourable circumstance might have mitigated the severity of the disease, and brought the death-rate below that which usually occurs in persons altogether unacclimated. The result of the pestilence, however, at that time was most disastrous, for out of 70 private soldiers attacked, including two officers, 44 died, showing a death-rate of 62·85 per cent., although the cases were supervised and carefully watched by Dr Robert Lawson, the then deputy inspector of hospitals, one of the ablest and most accomplished medical men whom it has ever been my fortune to meet. The 84th regiment, now stationed at Newcastle, and which has lately been the subject of a most malignant type of yellow fever, arrived here from Europe on the 2d April last, so that the men have not been sufficiently long in the island to reap the full benefit of acclimatization. Nevertheless, I find that, from the 9th July to the 16th August (since which date I have no returns) only 21 have died out of 54 attacked, being a death-rate of 38·88 per cent., or 24 per cent. less than it was in the epidemic of 1856. I am unable to state what number of yellow-fever cases at Newcastle has been treated by the sulphurous acid, although on my visit there, on the 26th July, I found that the medical officers were using it in all or in most of the patients; but until I can obtain more minute and precise details of the principles of treatment adopted in all the cases from first to last, it would be rash to draw an absolute conclusion as to the efficacy of the sulphites in yellow fever. All I can say at present is, that the use of the sulphurous acid has succeeded better in my own practice than any other, and that the result of its recent trial among the troops at Newcastle will be communicated to the profession whenever I may be put in possession of it; but I may repeat that the reduction of the death-rate by 24 per cent. is a matter of nō inconsiderable importance.

"In my next communication, I may probably furnish a synopsis of the cases of yellow fever treated by myself in Kingston, and those attended in the Naval Hospital at Port Royal, in all of which I had every reason to be satisfied with the potency of sulphurous acid in controlling the disease. In fact, the administration of this agent was so successful as to warrant my laying the subject before the profession and the public, in the hope that a more extended employment of the method may realize the expectation which I have formed of its value.

"In proof of the power of acclimatization in warding off the poison of yellow fever, and affording protection against its invasion, I may mention that during the severe epidemic of yellow fever in 1853, all the cases I met or heard of were in persons who had resided less than two years in Kingston; and this knowledge was gained by an attendance on 46 cases in private practice, and by the occasional inspection of 339 cases treated in the public hospital in the course of that year. I mention this to show the importance of giving such facts consideration when judging the causes or reasons why the Newcastle epidemic of 1867 should have been so much less fatal to those attacked by it than the fever which prevailed there in 1856.

"I may state, in conclusion, that these outbreaks of fever at Newcastle will depreciate the sanitary character of this military cantonment; in fact, it has proved inadequate to serve the purpose for which it was established. Since the illustrious Humboldt, many years ago, laid it down as a principle that the yellow-fever poison would never ascend above an altitude of 3000 feet from the sea level, implicit confidence has been placed in that dictum, but the experience gained among the troops at Newcastle during the last ten years completely negatives it; and it may probably happen that ere long the British Government will either carry out extensive alterations and sanitary reformations in this military station, or abandon it altogether as a location for white troops."

THE MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

At the meeting of this Society, held on Friday, 6th September, in the Hall of the Faculty of Physicians and Surgeons, St Vincent Street, the following gentlemen were elected office-bearers for the present session:—*President*—Dr Allen Thomson. *Vice-Presidents*—Dr Coats, Dr W. T. Gairdner. *Council*—Dr Yeaman, Mr Robertson, Renfrew, Dr Dewar, Dr Tindal, Dr G. H. B. Macleod, Dr A. R. Simpson, Dr Richmond, Paisley, Dr F. Thomson. *Secretaries*—Dr James Adams, Dr Robert Perry. *Treasurer*—Dr H. R. Howatt.

THE INDIAN MEDICAL SERVICE.

THE Candidates for Her Majesty's Indian Medical Service, who were successful at the Competitive Examination at Chelsea in February 1867, and who have undergone a course of instruction at the Army Medical School, together with the total number of marks obtained at the Examinations at Chelsea and at Netley, are given below:—

Names.	*Studied at*	*Marks.*
Macrae, W.	Aberdeen,	5893
Summerhayes, H.	London,	5080
Maconochie, G. A.	Aberdeen,	4833
Aldren, R.	Edinburgh,	4645
M'Gann, T. J.	Edin. & Dub.	4520
Bainbridge, G.	England,	4463
Arnott, J.	Glasgow,	4223
Batty, R. H.	Lond. & Ire.	4183
Knapp, W. F.	London,	4158
Ritchie, J. H.	Ireland,	4065
Leggatt, A. J.	London,	4005
De Tatham, H.	London,	3968
Shillito, J.	Lon., St And.	3965
Smith, J.	Edinburgh,	3710
M'Alister, J.	Glasgow,	3695
Kerr, D. A.	Aberdeen,	3405
Hackett, A. L.	Edinburgh,	3360
Lowry, J. R. C.	Dublin,	3310
Long, D. B.	Edinburgh,	3200
Hazlett, H. J.	Ireland,	3198
Thompson, D. R.	Madras & St Andrews,	3105
Power, R. V.	Ire. & Edin.	3100
Haliday, S. B.	Lon. & Edin.	2705
M'Clorg, A.	Dublin,	2625
Keelan, B.	Ireland,	2295

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P. Victor Bazire, M.D.,—Trousseau's Clinical Medicine. Part IV. London, 1867.

Griesinger's Manual of Mental Diseases. Translated by Dr Lockhart Robertson and Dr Rutherford. New Sydenham Society.

Henry Hartshorne, M.D.,—Essentials of the Principles and Practice of Medicine. London, 1867.

Drs Hayden and Cruise,—Cholera Epidemic of 1866 in Dublin.

Hirschfeld's Nervous System. By A. M. Macdougal, F.R.C.S. London, 1867.

J. A. B. Horton, M.D.,—Physical and Medical Climate and Meteorology of the West Coast of Africa. London, 1867.

Henry Lowndes,—On the Maintenance of Health. London, 1867.

M. L. Mitrā,—Voluntary Muscular Tissue, etc. Edinburgh, 1867.

Edmund Montgomery, M.D.,—On the Formation of so-called Cells in Animal Bodies. London, 1867.

E. Morris, M.D.,—Shock after Surgical Operations and Injuries. London, 1867.

Nouveau Dictionnaire de Médecine et de Chirurgie pratiques. Vol. VII. Paris, 1867.

F. W. Pavy, M.D.,—The Function of Digestion. London, 1867.

Balmanno Squire, M.B.,—Clinical Lectures (illustrated by coloured Photographs from Life) on the Skin. Nos. 3 and 4. Lond., 1867.

B. Squire, M.B.,—Unhealthy Skin. Lond., 1867.

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Berliner klin. Wochensch.,—Nos. 30 to 38.

Births, Deaths, and Marriages,—Return for July, Aug.; Quarterly Return for June.

Brit. Med. Jour.,—Aug. 3 to Sept. 28.

Bulletin Général de Thérapeutique,—July 15 and 30; Aug. 15.

Gazette des Hôpitaux,—Nos. 90 to 111.

Gaz. Hebd. de Médecine, etc.,—Nos. 30 to 38.

Gazette Médicale de Paris,—Nos. 30 to 38.

Glasgow Medical Journal,—Aug., Sept.

Journal de Médecine Mentale,—No. 8.

Jour. of the Scot. Meteor. Society,—July.

Madras Quarterly Jour. of Med. Science,—Nos. 20, 21, 22.

Medical Press,—Aug. 7 to Sept. 25.

Med. Times and Gazette,—Aug. 3 to Sept. 28.

Nederlandsch Tijdschrift voor Geneeskunde,—Nos. 23 to 31; Tweede Afd., Tweede Afl.

Rev. de Thérapeutique Médico-Chirurgicale,—Nos. 15 to 18.

Vierteljahr. für Gerichtl. Medicin,—Vol. iii., 1867. Prague.

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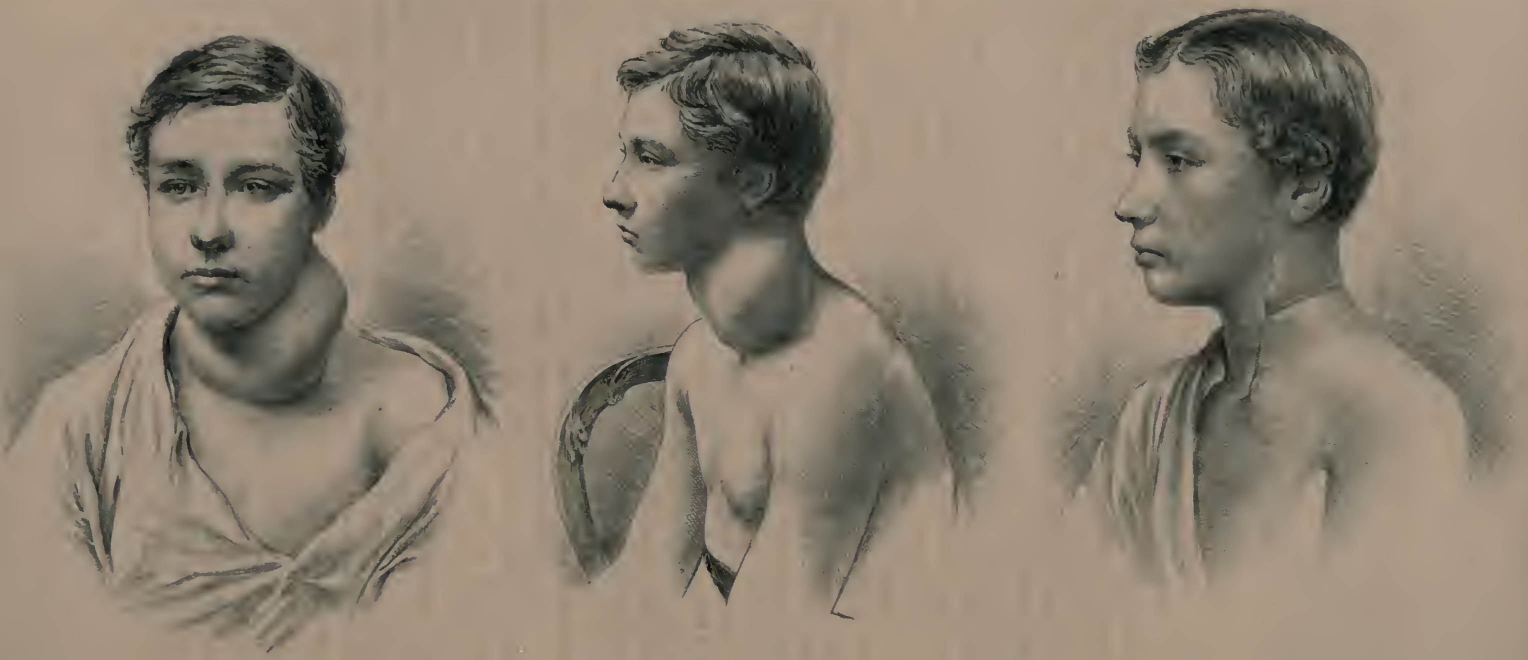
Wochenblatt der Aerzte in Wien,—No. 32.



PROFESSOR SPENCE'S CASE OF TUMOUR

Printed by Keith & [illegible] Edin^r

Part First.

ORIGINAL COMMUNICATIONS.

Article I.—*Case of large deep-seated Tumour of the Neck successfully removed by Operation.* By James Spence, Esq., F.R.S.E., President of the Royal College of Surgeons, Edinburgh, Surgeon to the Queen for Scotland, Professor of Surgery in the University of Edinburgh.

In the Dublin Quarterly Journal for November 1863, I published a memoir of the case of Mrs Jepson, from whom I had successfully removed an enormous deep-seated tumour of the neck. The following is another example of the excision of a growth similar in character, though presenting some local peculiarities:—

George Manson, æt. 16, recommended to me by Dr Grant Smith of Thurso on account of a large cervical tumour, was admitted into the Royal Infirmary under my care on the 9th of June 1867.

On examination, the tumour, which was somewhat irregular in form, nodulated on the surface, and of a firm consistence, was found to occupy the whole of the left side of the neck. Commencing at a point close under the angle of the jaw, it passed beneath the sterno-mastoid muscle, and then projected towards the surface, extending back to and elevating the anterior margin of the trapezius, and occupying the whole of the supra-scapular and subclavian regions of the neck, where it lay below the posterior belly of the omo-hyoid muscle. On the mesial side of the sterno-mastoid, the tumour projected inwards, pressing the larynx and trachea to the right side; it bulged upwards to a level with the os hyoides, and below, it dipped beneath the muscles in front of the trachea, and descended into the supra-sternal fossa. The growth seemed movable, and its margins were pretty well defined, except at the sternal region, where it appeared to pass deeply, and where the superimposed textures bound down its surface so as to prevent its connexions from being so clearly ascertained as in other directions. It was not moved by the efforts of deglutition, but the position of the belly of the omo-hyoid was very distinctly seen over the posterior portion of the tumour during such efforts. The superficial veins of the left side of the neck were somewhat larger and more numerous than those of the opposite side. The history of the case showed that the tumour had been originally, and for many years, of slow growth. It was first noticed when the boy was three years of age, and increased little for the first eight or nine years; but of late it had progressed more rapidly, especially during the last two years. There was no pain in the tumour, nor interference with deglutition, but for some months the breathing at night had become oppressed, and at times spasmodic. The lad's health was good; there was no appearance of emaciation, and all the functions were natural.

The tumour was firm, and apparently solid throughout, and, as I have said, tolerably well defined. The youth and his friends were anxious that something should be attempted to relieve the increasing difficulty of breathing; and on my stating that I thought the removal of the tumour advisable, they readily consented to the operation.

On the 12th of June, I performed the operation for the removal of the tumour in the following manner:—I first made an incision along the course of the sterno-mastoid, from the angle of the jaw to beyond the sterno-clavicular articulation. Then at its lower termination I made a small transverse incision, about an inch and a half in length, so as to enable me to expose more fully the part where the tumour passed into the sternal fossa. Lastly, I carried a third incision, four inches long, from the middle of the first incision backwards to the anterior margin of the trapezius. I then dissected the skin and platysma, so as to expose the anterior portion of the tumour as far inwards as the tracheal margin, which I cleared from the fascial covering, and elevated. Next passing my finger beneath the fascia and the fibres of the omo-hyoid muscle, which were stretched over the growth at the lower part of the neck, I divided them, and had the satisfaction to find that the substernal portion was defined and unattached, and could be readily turned out. I now proceeded to clear the remainder of the tumour by dividing the sterno-mastoid transversely and dissecting it, and the other coverings off from the surface in two flaps, as marked out by the incisions. In doing this, some small superficial vessels were tied. On fully exposing the tumour, a large vein was seen on its surface at the upper part. This vein, though distended above, was obliterated where it lay over the lower part of the growth. The distended part of the vein I included in two ligatures and divided it between them. The whole mass being now fully exposed, I proceeded to dissect it out from before backwards, feeling with my left fore-finger for the vessels, so as to protect them from risk of injury. On clearing and raising outwards the anterior portion of the growth from its deep connexions, the carotid artery and pneumo-gastric nerve were seen bare, as if dissected from their sheath, but the internal jugular vein could not be seen, and the pneumo-gastric lay somewhat in front of the carotid at its lower part. As I could neither see nor feel anything of the internal jugular, I next dissected the tumour from its posterior aspect, and then from the subclavian space, cutting with the edge of knife close towards the deep surface of the tumour, so as to avoid the phrenic and sympathetic nerves and the thoracic duct in the deep dissection at the inferior region of the neck. At one part the tumour was closely adherent to the fascia over the upper part of the scalenus anticus, but by dissecting the fascia from the muscle the whole growth was removed entire.

The parts now represented a deep dissection of the whole side of the neck, but no trace of the internal jugular vein in its natural relation could be seen, and it was concluded that the vein tied on the surface of the tumour was the jugular. There was very little bleeding, only a few small arteries requiring to be tied; but the last touch of the knife, separating the tumour, divided a small vein, which retracted between the transverse processes of the vertebræ, and as it could not be seized, the troublesome oozing from it required to be arrested by pressure. The surface of the wound was painted over with tincture of iodine, and the integuments were replaced and united by sutures, except at the posterior angle of the transverse incision, which was left open to permit any discharge to escape, a compress of sponge supported by a bandage being placed over the wound to prevent venous oozing. The patient was then removed to the ward and placed in bed, his head properly supported. In the evening, some recurrence of bleeding necessitated opening the posterior part of wound. The bleeding was found to proceed from a small artery, which was tied. No further bleeding from the vein had taken place, and the wound was finally closed with sutures.

On the 13*th.*—The patient was pretty well. Pulse 100. Some nausea from chloroform. Ordered a saline aperient mixture.

14*th.*—Free from sickness; bowels have acted freely; tongue clean; skin cool. Pulse 90.

15*th.*—Continues doing well. Pulse 84.

16*th*—Pulse 76. Most of the stitches removed.

17*th.*—Incision along sterno-mastoid entirely united, as also the small incision at sternum. A good deal of healthy discharge from the transverse incision. Pulse 80.

20*th.*—Pulse 64. All ligatures except two have come away. Slight pressure with strapping to be applied over the corner of wound, near the ear, where pus has a tendency to lodge. Wound dressed with weak solution of tincture of iodine in water. From this time the patient's progress to recovery was uninterrupted. On 31st July the wound was healed throughout, except the surface of the cicatrix; he was able to be out of bed and walking through the ward with the head unsupported; and he was dismissed from hospital on the 24th of August.

The photograph showing the recently cicatrized wound left after removal of the tumour was taken on the 2d of August.

Examination of the Tumour.—The tumour, which presented an irregular nodulated surface, was of somewhat ovoid shape, broader below than above, and of a uniformly firm consistence. On making a longitudinal section, it presented much the appearance of the section of a gland mixed with fibrous texture; and, on more minute examination, it had all the usual characters of the adenoid growth. About the centre of the section, two small portions had a dark bloody colour, and felt softer than the rest of the growth; but, on careful examination, they were found to be essentially of the same structure as the rest of the tumour.

In my memoir of Mrs Jepson's case, I adverted to the want of success which has hitherto attended operations for the removal of such deep-seated cervical tumours, as I could find no record at that time of any case in which a large tumour situated under the sterno-mastoid had been completely removed, with ultimate success; none, indeed, where complete removal had been effected. As it seemed to me that this want of success had led some surgeons to express strong opinions against operations for the removal of deep-seated cervical growths, I stated my opinion that the certainty of complete and safe removal of such tumours depended on the selection of proper cases for operation, by careful attention to the history of the case, and to the diagnosis of the character of the growth; for if the tumour was of slow growth and simple character, we could calculate on its comparative definition and circumscription. I mentioned that these were the conditions which decided me in operating in Mrs Jepson's case, although other surgeons had declined. Contrasting the history and vital manifestations of the tumour in her case with those of the cases operated on by John Bell, Warren, and Liston, in which complete removal had been found impossible, and in which the growth had returned, I pointed out that the histories of the latter cases showed evidences of malignant character which, in my opinion, rendered operation improper in the present state of our knowledge; but that, so far from deterring from operative interference in favourable cases, they rather gave encouragement, by showing how much could be done even under unfavourable conditions.

Unfortunately, the proportion of malignant cervical growths is much greater than of those suitable for interference. Out of a very large number of such tumours which I have seen, especially since the successful operation on Mrs Jepson, with the single exception of the present case, I have met with none in which operation would have been warrantable (I do not include ordinary parotid tumour), as they were all marked by the characteristics of malignancy.

When the tumour has been of rapid growth from the first, is of irregular consistence, and presents the general features of malignant disease, I believe that operative interference is very doubtful, as the chances of complete removal and ultimate successful issue are very small. Even though there be considerable mobility and apparent definition, such growths very generally arise from or involve at an early period, the transverse processes of the vertebræ, whilst their superficial margins feel loose and defined. Mobility of the tumour, though an important consideration in deciding on the question of operation, is only of real value when taken in conjunction with the nature of the growth. A malignant tumour may not only adhere to, but involve the great vessels and nerves, and yet be very moveable, for these structures, being loosely connected in front of the vertebræ, move readily along with the morbid mass. In my remarks on Mrs Jepson's case, I entered so fully on the special circumstances to be considered in deciding on the propriety of operating, that I would merely refer to it for information on these points, and limit my further observations on the present case to peculiarities in regard to its anatomical relations.

In the lad Manson, though the tumour was a very large one, it was entirely confined to the region of the neck, and hence did not give rise to the same amount of deformity as in Mrs Jepson, in whom the growth occupied the parotid as well as the cervical region. In Manson, however, the tumour passed lower down into the subclavian and sternal regions, and from being placed on the left side, lay in a position to press upon the thoracic duct and left recurrent nerve; whilst the textures covering it in the sternal fossa rendered it impossible to ascertain positively its definition or attachments there. The perfect nutrition of the patient, however, showed that, though in close relation with the thoracic duct, it could not have involved that structure; and though the spasmodic difficulty of breathing at night, which he occasionally felt, might be due to pressure on the left recurrent laryngeal, the symptom was only of recent occurrence and not constant, and hence was more likely to arise from pressure owing to the proximity of the tumour, than from the nerve being involved in or adherent to it. These considerations, taken in connexion with the simple nature of the growth, and its origin high up in the neck, seemed to warrant the conclusion that its substernal portion was free, and merely bound down by the fascia and muscles.

During the operation some peculiarities showed themselves, which I think worthy of notice as exemplifying the difficulties we must be prepared for, and the care required in such operations, or rather dissections of the neck. When the anterior margins of the tumour had been freed, and its deep surface dissected and raised off from the position of the carotid sheath, the whole length of the cervical portion of the carotid artery and vagus nerve were seen bare as if dissected, but there was no appearance of the internal jugular vein. This made me proceed very cautiously, for two reasons: *first*, the great vein might be partly involved or displaced by the tumour, and thus liable to be wounded at some unexpected part; and, *secondly*, by the absence of the vein the sympathetic nerve and thoracic duct were left uncovered, and these important structures, undistinguishable amongst the tissues discoloured by blood, were exposed to great risk of injury. The phrenic nerve, from its white colour and comparatively superficial position, was easily enough seen and guarded. Indeed, the absence of the vein from its natural position, and the uncertainty as to whither it might be displaced, I consider the most embarrassing conditions in the operation.

In describing the operation, I have stated that on dissecting the flaps from the surface of the upper part of the tumour I tied a large vein, which I was inclined to think was the displaced internal jugular vein; and my reason for supposing this was, that the vessel could be traced from the angle of the jaw passing downwards over and partly in a groove on the surface of the tumour in relation with the deep surface of the sterno-mastoid, and very much in the line of the jugular; but as it was obliterated about the middle of the neck, its continuity could not be traced lower down. The pervious portion was about the bulk of the fore-finger, and full of blood for about two inches, when it became a flattened cord. I should presume, from the relations of the tumour, that it had probably originated at an earlier age even than that stated, viz. the third year, when it was first noticed by the patient's friends, and that it had developed itself from above downwards, and thus insinuated itself between the parts which usually occupy the common sheath, raising the vein on its surface and pressing the artery and vagus inwards, before its bulk overlapped them. I draw attention to this point, because it is well to be prepared for similar difficulties; and I believe that the history of the case may guide us, as these anatomical relations seem to me to depend specially on the original position and development of the growth in early life, before the cellular texture of the common sheath has become condensed, and are not likely to be met with in cases where the tumour commences at a later period of life; for, as a rule, a simple tumour, whilst it may adhere to, or compress, or push aside structures, has no tendency to destroy texture or separate parts contained in a common fibro-cellular sheath.

In conclusion, I may state that neither in Manson nor Mrs Jepson was the division of the sterno-mastoid attended by any malposition, or even by any interference with the movements of the head; nor was the section of the cervical portion of the spinal accessory nerve followed by any appreciable bad effect.

ARTICLE II.—*Cases of Poisoning by Susumber Berries.* By Dr MANNERS of Jamaica. With Observations by JOHN MILLAR, Esq., M.D., F.R.C.S.E.

THE following notes of two cases of poisoning by means of susumber berries, collected by Dr Manners, coroner for St Dorothy, Jamaica, are not only of intrinsic merit, but also of considerable interest, from the fact that, as far as I am aware, they are the first cases recorded of poisoning in the island of Jamaica through the indiscriminate use of the two varieties of the susumber berries. Notwithstanding the probability that other cases may have occurred both previous to those here narrated as well as since, yet Dr Manners may justly claim credit for drawing attention to what may prove a key to many of the mysterious complaints of tropical regions, where, from the luxuriance of vegetable life and the numberless varieties of the edible plants, mistakes are very liable to occur from the use of an injurious and poisonous variety; thus producing a train of symptoms, ending in death, that might, in the circumstances, be mistaken for choleraic diarrhœa or dysentery, and yet possess no real analogy to these complaints.

Dr Manners thus writes:—

"I was called by the overseer of an estate distant five miles from my residence, who stated in his letter that one of his men was very ill, and to come at once. I accordingly went, and having my esteemed friend the late Dr Flynn, assistant-surgeon 4th W. I. Regiment, staying with me, I asked him to accompany me. We got to the estate about eight A.M., but found we were too late, as the man was dead. I immediately issued a warrant for an inquest, which was held three hours after. In the interval, the overseer asked me to go and see the family of the deceased, who were also sickly, having partaken of the same food, which was salt fish and susumber berries,—a berry very much eaten by the negroes, imparting a bitter taste to the food. On arriving at the house of the deceased's family, I found them all with anxious countenance, pupils dilated, and skin cold; they were hardly able to articulate, the tongue appearing heavy. I at once ordered stimulants to be given: previous to my visit they had taken mustard emetic, and had the stomach well cleaned. In the course of a few hours they were able to go to work.

"All the evidence went to say that the deceased Robert Gordon took his breakfast about seven A.M. on the 26th, and went to the overseer's house about eight A.M. and took a drink of rum, and in about half-an-hour he felt sick, a darkness over his eyes, his skin cold, and cramped all over; he talked thick, and never vomited.

"The post-mortem examination took place three hours after death. There were no marks of violence on the body. I opened the thorax and abdomen, and found the heart and lungs healthy, as also the liver and spleen. The stomach and peritoneum were very vascular and congested, especially the mucous membrane of the former, which was of a very pinkish colour. Some indigested food and susumber berries were in the stomach. The heart, stomach, spleen, and small piece of liver were put into a jar and sent to Mr Hoffman, island chemist, for examination.

"I believe he died from inflammation of the stomach, caused by some poisonous food."

"*Kingston, March* 19, 1863.

"Dr Thomas Manners, coroner for St Dorothy.—Sir,—Having completed the analysis of the viscera of Robert Gordon, I have now the honour to report the result. On opening the keg sent by you, I found a stomach, a heart, a spleen, and a small piece of liver. The reaction of all these was alkaline from ammonia. The stomach contained a good many susumber berries, which were readily recognised by their seeds accompanying them. The mucous coat of the stomach was in its natural condition. Dr Flynn states in his evidence that the mucous membrane was pinkish. This colour was due to the mucus adhering to the membrane, and which mucus had a pinkish tint imparted to it by the susumber berries, several of which (namely those found in the stomach) appeared quite purple when viewed in direct sunlight. I examined the stomach very carefully, first spreading it on a porcelain surface, and then throwing a disk of direct sunlight on it while in a darkened room. Dr Flynn reported 'the stomach very vascular and congested,' which I found to be correct. From what had been stated, it is evident that the pinkish colour of the mucous membrane was an optical effect due to the manner in which the observation was made,—probably by holding the stomach between the eyes and the sunlight, in which case the transmitted light would have a uniformly pinkish light. As the poisonous susumber berries are covered with short stiff hairs, I carefully examined the stomach for such, but did not succeed in detecting any. As the symptoms which preceded death agree very well indeed with those produced by solanine, and as chemical investigations on viscera of persons poisoned by solanine are very rare, I was obliged to perform some preliminary experiments in order to determine what process to follow in this case. Solanine is a glucosite, and, in consequence, a very unstable compound, and therefore offers no mean difficulties to the analyst. Although the process of Professor Stas will do very well where persons have been poisoned by an overdose of solanine itself, it has failed with me to isolate it from the berries when the latter were mixed with decaying animal matter. I finally concluded to employ Usslar and Erdmann's process, although even this is far from perfection as regards solanine. The stomach was finely divided by scissors, and the mass stirred up with about four times its bulk of water, to which was added very dilute hydrochloric acid (deprived of every trace of chlorine by hydrosulphuric acid) until a very slight acid reaction was obtained. After allowing the mass to digest for three hours, the whole was heated to the temperature at which the albuminous matter coagulated, and no farther. The liquid was allowed to cool; the whole was then thrown on a piece of linen cloth, and the residue pressed out; the fluid was filtered. The filtered fluid was at once mixed with a slight excess of ammonia, and was carefully evaporated on the water bath, a little more ammonia being supplied every five minutes during evaporation. The solid residue was treated with hot amylic alcohol, which became deep yellow. By repeatedly shaking this solution with cold water, a good deal of the colouring matter was removed from the amyl alcohol. A portion of the amyl alcohol solution being evaporated, the residue exhibited the following properties:—A very slight alkaline reaction, a bitterish pungent taste; concentrated nitric acid dissolved it to a pale yellow fluid, all around which the thin layer of substance spread over the porcelain dish in which the reaction was performed (each reaction in a separate dish, of course), became of a beautiful carmine or pink colour; concentrated sulphuric acid gave a gamboge-coloured solution; nitrate of silver became reduced on heating. The greater and remaining part of the amyl alcohol solution was violently agitated with a small quantity of dilute hydrochloric acid. The acid solution, after having separated, was removed by a pipette, and the following reactions obtained with it:—Ammonia, a yellowish, flocculent precipitate; picric acid, a sulphur-coloured precipitate; tincture of nut-galls and a drop of hydrochloric acid, an abundant curdy precipitate; carbonate of potass, a gelatinous precipitate; perchloride of iron gave a black-coloured fluid. Peroxide of lead and sulphuric acid did not yield any reaction. From this it is evident that the solution contained solania (solanine), and that it did not contain any trace of morphia, strychnia, and brucia. For further satisfaction, I took the heart, liver, spleen, and the solid residue from the stomach, and analysed them carefully for mineral poisons, without being able to detect the slightest trace of any mineral poison whatever—especially not a trace of arsenic. It is therefore my opinion, based upon chemical analysis, and the symptoms preceding the death of Robert Gordon, that the latter died from the effects of poisonous susumber berries, and not from the effects of inflammation of the stomach.

(Signed) "L. Hoffman.
(Attested by) "J. N. Van, J.P."

Another case occurring shortly after of a similarly suspicious character, in which death resulted, the viscera were sent to Mr Hoffman for analysis, who forwarded in a short time the following statement:—

"*Kingston, 20th November* 1863.

"Sir,—Having completed the analysis of the viscera left by you at my laboratory in the beginning of the month, I have now the honour of informing you of the result of analysis. The jar contained the stomach, portion of liver and spleen of some person stated to have died suddenly under suspicious circumstances. Besides these, the jar contained also 5½ ounces of sanguinolent fluid, which had a slightly alkaline reaction. The exterior surface of the stomach was sprinkled with concretions of phosphate of lime, which did not contain any carbonate, looking and feeling exactly like fine white sand. Both ends of the stomach were secured by ligatures. On opening the stomach, two dead worms, each nearly three inches long, were found. The stomach was otherwise completely empty.

The fundus showed signs of congestion. There was some reddish mucus near the cardiac surface, the rest being covered by brownish mucus. The surface of the liver was also completely dotted with the concretions of the phosphate of lime of the size of fine to that of coarse sand. The stomach, liver, and spleen were well washed in the accompanying sanguinolent fluid; and this latter was then introduced into a glass distilling apparatus, in which it was supersaturated with dilute sulphuric acid, and then subjected to distillation in a dark room. No phosphorescence could be observed; there was therefore no phosphorus in the mass. The distillation was continued until two drachms of distillate had been obtained. This was tested by Liebig's test for prussic acid, but not the faintest trace of the latter could be discovered. The residuary mass in the distilling apparatus was now neutralized by ammonia, and then added to the stomach, liver, and spleen, all of which had been finely cut up beforehand, and mixed with a sufficiency of water. The whole mass was rendered decidedly acid by dilute and pure hydrochloric acid, and the whole was then carefully heated to the point only at which the albuminous matters coagulate. The mass was then filtered, and the filtrate divided into two parts. One part was allowed to evaporate spontaneously until it was reduced to the bulk of two ounces. (This spontaneous evaporation occupied nearly a fortnight, in consequence of the dampness of the atmosphere.) This concentrated liquid, which had been kept in an acid condition by the occasional addition of a little dilute acid was then introduced into a distilling apparatus with a moderate excess of caustic lime, and subjected to distillation until two drachms of distillate had been obtained. This distillate was saturated with dilute sulphuric acid, and the resulting liquid mixed with caustic soda in excess and ether, and well shaken. The ether was poured off and allowed to evaporate spontaneously in a porcelain dish. The faint residue had no alkaline reaction, nor any smell, or any other of the properties of a volatile alkaloid. The other half of the original fluid was supersaturated with ammonia, and then evaporated in the water-bath to the consistency of a thick syrup, some ammonia being added occasionally to prevent the mass from turning acid. The syrupy mass was now exhausted by boiling hot amylic alcohol, which was filtered. The filtrate was then treated with dilute hydrochloric acid, and the acid solution frequently shaken with fresh portions of amylic alcohol, in order to decolorize the acid solution as much as possible. The acid solution was then supersaturated by ammonia, and the alkaline fluid well shaken with boiling hot amylic alcohol. The amylic solution thus obtained was used for the detection of fixed organic alkaloids, small portions of it being evaporated in separate small porcelain dishes, and the residue tested. One portion, after having been stirred with a drop of dilute sulphuric acid, was placed on the tongue and tasted. There was not perceptibly the slightest bitter taste. Another portion, treated with a drop of acid, did not give any reaction with perchloride of iron. There was therefore no morphia. Another portion did not give the red coloration with concentrated nitric acid: therefore there was no brucine. Another portion, tested with nitro-sulphuric acid and bichromate of potassa and proxide of lead, produced no characteristic reaction—there was therefore no strychnine. Chloride of gold, however, was readily reduced; nitrate of silver was but slightly reduced; tincture of nut-galls, and a drop of dilute hydrochloric acid, produced a curdy precipitate; concentrated sulphuric acid produced an orange colour; and concentrated nitric acid, when allowed to remain for some time in contact in the state of vapour with the residue, produced a distinct carmine colour. These reactions indicate the presence of a trace of solanine, the alkaloid contained in poisonous susumber. The picric acid test, however, failed, so did also the test with carbonate of potassa. All residues resulting from the forementioned processes were now mixed and treated for four days with a current of sulphuretted hydrogen, being alternately exposed for a day to any sunshine that was to be obtained. The precipitate obtained was yellowish gray. It was well-washed, fused with carbonate and nitrate of soda; the fused mass decomposed with excess of sulphuric acid, and the acid solution tested by hydrosulphuric acid, and in Marsh's apparatus. Not a trace of any mineral poison could be discovered. As I am not in possession of sufficient information with regard to this case, hardly anything being known of the symptoms preceding death, it is impossible to give an opinion with confidence as to the cause of death. The stomach being completely empty, would rather discountenance the idea of the deceased having been poisoned by some powerful mineral or vegetable organic poison, which must have been administered in some vehicle. The trace of solanine would simply imply that the person had been eating of the poisonous susumber some time previous to death; and it is well known that many persons use the poisonous and non-poisonous susumber indiscriminately, although this is evidently a dangerous practice.

"J. HOFFMAN."

It is, indeed, much to be regretted that in this latter case the symptoms before death were not observed, as, in all cases of poisoning, it is only by a careful consideration of the symptoms that medical men are able to distinguish the character of the poison, and use the appropriate remedies the case requires.

As regards the botanical nature of the plant, it belongs to the Solanaceæ, natural order Luridæ. According to Lunnan, in his "Hortus Jamaicensis," the name is *Solanum Bacciferum;* although on this point there is some difference of opinion among botanists, as Prof. Balfour considers that they bear an analogy to the *Solanum verbascifolia.* It is an herbaceous plant, with a stem about five or six feet high, with tomentose prickly branches, bearing on prickly pedicles large angular lobed soft leaves, somewhat hairy on both sides, with a prickly midrib below. The flowers appear in bunches at the side of the stalks. The flowers are monopetalous, with apices like the rest of the Solanaceæ. They have round orange-coloured berries, of the size of small cherries, five capsuled, full of an orange-coloured pulp, containing small white seeds. There are two varieties, both very common in Jamaica, one of which has a yellowish and the other a purplish stalk, though sometimes it is not easy to distinguish the two varieties. From the fact that these berries are much eaten by turkeys, they have received the name of turkey berries; they are also known under the names of soushumber, cat-nail, Port Morant tobacco, and macaw bush. With respect to the medicinal virtues of the plant, Lunnan states that their roots are "very bitter, of thin parts and excellent virtue; half-an-ounce in powder purges all humours downwards, opens obstructions of the liver and prostate, provoking urine, being used instead of the opening roots which are so much esteemed. The decoction of the roots is diuretic, and good in burning fevers; with honey in catarrh; and in strangury, with cardamoms, it expels wind. The decoction of the leaves, with sugar and limes, is good for the itch, and also for the mange in mules. The juice of the roots and leaves are said to be good for consumption; and the leaves, when boiled with a small proportion of oil-nut leaves, are recommended as a good fomentation for sores."

The Solanaceæ, as exemplified in the *S. Dulcamara* and the *S. Nigrum*, possess plants with considerable poisonous properties, due to the presence of the alkaloid solania, whose action has been principally investigated by Dr Clarus of Leipzig. According to his experiments, solania possesses some similarity to strychnia, in as far as both excite the sensibility of the skin. Like conia or nicotina, solania destroys life by producing paralysis of the muscles of respiration, as the symptoms in the case first described clearly indicate. In common with all cerebro-spinal as well as narcotico-acrid poisons, there is, in poisoning by any of the Solanaceæ, great depression and sinking of the vital powers, accompanied with cramps, together with sickness and great coldness of the surface of the body. Dr Manners' first case is, however, peculiar, as among those affected by the poison in the house of the deceased he mentions that he found the pupils dilated, a symptom characteristic of poisoning by atropine, daturine, and hyoscyamine, but not so generally present in the case of solanine.

ARTICLE III.—*Fourteen Cases of Ovariotomy.* By THOMAS KEITH, F.R.C.S.E.

SINCE the last series of operations for ovarian disease reported in the December number of this journal for last year, I have performed ovariotomy fourteen times. These cases are now narrated, in accordance with the practice hitherto followed, of giving to the profession an account of every operation, whether successful or not.

Of these, twelve recovered and two died. In most of them the operations were severe, and in several the convalescence was tedious, giving rise to no little anxiety as to the result. In one of the fatal cases, much local difficulty from pelvic adhesion was known to exist; and the operation was commenced on the understanding that it might be completed or not according to circumstances. I have little doubt that the excessive vomiting from chloroform gave rise to accidents which were the cause, in a great measure, of the fatal result. The other unsuccessful case was one of semi-solid tumour, surrounded by viscid fluid, the product of chronic peritonitis. It was complicated with double pleuritic effusion; and nearly half-a-gallon of fluid had been removed from the left pleura a fortnight before. So much relief was thus obtained, that ovariotomy seemed warrantable; and it was hoped that by the removal of the tumour, the drain upon the system arising from the ascitic fluid would be checked. A sudden increase of the pleuritic effusion on the fifth day rapidly proved fatal. The circumstances under which this operation was performed, I need hardly say, were not favourable for success.

Besides these, there is given a case in which, after emptying the cyst, there was found to exist such an intimate connexion of its posterior surface with the small intestine, mesentery, aorta, and common iliac vessels, that I made no attempt to do more. The wound was closed, a free opening being left in the cyst communicating with the cavity of the peritoneum. No bad consequences followed; and when this patient was seen a few days ago, she was going about in excellent health, and as yet there was no appearance of the cyst refilling.

CASE XLVII.—*Multilocular Ovarian Tumour, upwards of forty pounds. Once tapped. Ovariotomy. Recovery.*

A widow lady from Southport, sixty-five years of age, extremely fat, with a feeble heart, but of a tolerably healthy aspect, consulted me in July 1866 as to the propriety, at her time of life, of having a large ovarian tumour removed. Its nature had been recognised about a year before by Dr Millington of Wolverhampton, and of late its increase had been decided. Fluctuation was uniform over the abdomen, which measured forty-seven inches at the umbilicus. The uterus was central, low down, and movable. The impression left by a single examination was, that the tumour was composed of nearly a single cyst, and that, notwithstanding her age, and the extreme thickness of the abdominal wall, the case was one in which ovariotomy might be performed without more than the ordinary risk. She went home to advise with her family, and returned in September. Meanwhile a correspondence had taken place with Dr Millington. He informed me that many of the patient's blood-relations suffered from feeble fatty hearts, and that some years ago, when reduced by long confinement, in consequence of an injury, this lady had shown symptoms of becoming similarly affected. He had not seen her since he detected the tumour; but he then thought that the base of it was solid.

On her return, her general condition was not so good as before. She was pale, the pulse generally about ninety, and somewhat feeble. The girth had increased to fifty inches and a half; and as the wall below the umbilicus was œdematous, it appeared more prudent to have a preliminary tapping. After eighteen pounds of thick bloody fluid had flowed, the canula became choked with pieces of fibrine. She was somewhat relieved by this, though her size was not much reduced. The semi-solid that remained was large, and in the left iliac region the tumour felt as hard as a fibroid. Much to my surprise, the slightest movement of this solid portion was communicated at once to the uterus, which, previous to the tapping, was quite movable, though now it seemed that the connexion between the uterus and tumour was close. The uterus lay low and far back in the pelvis; and taking into account the unusual thickness of the abdominal wall—afterwards found to exceed three inches—there did not appear much hope that it would be possible to secure the pedicle externally. It seemed to me that the case was one in which success after operation would very much depend upon whether this would be possible or not, for the general condition of the patient was not good; and the impression left upon me was, that should it be necessary to return the pedicle with the ligatures, the chances would be that red serum would be thrown out in place of healthy lymph, and that she would probably die of low abdominal inflammation.

Under these circumstances, and considering the amount of semi-solid, such a favourable prognosis could not now be given as formerly. The chances of success and failure seemed about equal, while at sixty-five the gain was not great. The proper course was to leave the decision to the patient and her family. The result was, that ovariotomy was agreed on, and performed on the 4th of October. The incision extended from the umbilicus downwards, being made larger than usual, on account of the thickness of the parietes. The peritoneum was so firmly adherent to the cyst that a careful dissection was for some time necessary. The tumour was freely cut into, and a great quantity of fibrinous matter removed. The semi-solid portion was then broken up, and the cavity carefully sponged before separating the adhesions, which were extremely firm, and extended over nearly the whole anterior surface of the cyst. The base was adenoid, and a very short pedicle was transfixed and tied about an inch from what felt to be the uterus, for from the size of the semi-solid portion it was impossible to see the exact state of the parts. On cutting away the tumour, what appeared at first to be the uterus was found to be a thin, tense, round cyst in the broad ligament, the size of the fist. It arose close to the uterus; and on emptying it of its clear watery contents, a very fair pedicle was obtained, which was secured by a clamp. The position of this cyst explained most satisfactorily the apparent close connexion which seemed to exist after the tapping between the uterus and tumour. The broken down cysts and fibrinous contents weighed twenty-four pounds, and eighteen pounds of fluid had been removed by tapping ten days before.

The chloroform vomiting was severe, and continued till next morning. There were, however, no unfavourable symptoms. The stitches were removed on the fifth day, when the wound was quite united. The clamp was removed on the eighth day. After this she had for some days a troublesome cough with some expectoration. In consequence of this, irritation was set up in the wound, and there followed suppuration in the sheath of the rectus muscle. Towards the end of the second week there was troublesome irritation of the bladder, which was relieved after free discharge from the side of the pedicle. This most probably came from suppuration of the cyst in the broad ligament. Though her convalescence was slow, she was able to leave her lodgings six weeks after operation, to pay a visit to some friends previous to her return to Southport in the end of November.

Case XLVIII.—*Semi-solid Ovarian Tumour. Ovariotomy. Recovery.*

In September 1866, I saw, with Dr Buchanan of Dumbarton, a a married lady, forty-two years of age, with a large semi-solid tumour. The abdomen was very hard, and there was a good deal of general tenderness. The circumference at the umbilicus was forty-one and a half inches. To the left side there was, at one spot, obscure fluctuation and coarse crepitus over a small extent. The uterus was central, far back, and, though movable, felt as if closely connected with the tumour. She remained in town for some days, and, after several examinations, the diagnosis given was "semi-solid ovarian tumour of left side—no evidence of adhesion—pedicle probably short." The prognosis given was favourable. It was evident that nothing was to be gained by tapping, and Dr Buchanan and I, therefore, felt justified in recommending ovariotomy as long as her general condition was fairly good.

The tumour was removed on the 25th of October, at the patient's home in Dumbartonshire, through an incision not much larger than sufficient to admit the hand; had it been removed entire, an opening to the sternum would have been required. It was cut into and broken up by the hand, not without some difficulty on account of the small cysts and firm texture of which it was composed. The pedicle was scarcely an inch in length, and as the cyst walls were dragged out, free bleeding was seen to be going on from a large transverse rent in the pedicle close to the uterus. It was necessary to transfix and tie in everything behind this. A clamp was put on, bringing the fundus of the uterus into the wound. The right ovary was quite healthy, and after sponging the pelvis from all blood, the wound was closed as usual by silk sutures. The broken-down cysts and cyst walls weighed twenty-eight pounds.

There was severe chloroform vomiting for the first thirty hours. The pulse remained rather high for the first ten days, ranging between 104 and 118, but there was little rise of temperature. There was more than usual depression of the clamp, and some red discharge came from the uterus from the fourth till the seventh day. The wound healed by the first intention, and when I saw her three weeks after operation, she was up and dressed. In the fifth week she had some pelvic pain, and Dr Buchanan wrote me to say that an abscess was forming and pointing in the vagina. After a few days some matter escaped from the abscess, and since then she has been in excellent health.

CASE XLIX.—*Multilocular Ovarian Tumour. Ovariotomy. Recovery.*

Miss S., aged sixty-three, from Broughty Ferry, was sent to me for ovariotomy on the 26th November 1866, by Dr Gibson of Dundee. Fifteen years ago she became aware of the existence of a small movable tumour in the left side. Its increase was very gradual, and she was able to go about for some years after it had attained a very great size. At length, however, the œdema of the limbs became excessive, and her general health began to give way. In June last, Dr Gibson removed nearly six gallons of fluid from the cyst, to her great relief. It soon began to fill, and when she came to town her girth was forty-two inches at the umbilicus.

Ovariotomy was performed on the 28th of November. One very large cyst and a smaller one were emptied, and a very thick cyst, with some semi-solid, weighing five pounds, was easily removed through a small incision. The pedicle was thick and extremely short; the uterus would not rise from the pelvis, so that when the clamp was applied it was depressed to near the sacrum.

There were no unfavourable symptoms, though there was more depression of the clamp than I had previously witnessed, and to quiet an unusual amount of restlessness and nervousness, more opium than usual was necessary. She returned to Dundee quite well twenty-five days after operation.

CASE L.—*Multilocular Ovarian Tumour. Twice Spontaneous Rupture. Ovariotomy. Recovery.*

In October 1865, Dr Guthrie of Brechin sent me an unmarried lady, forty-seven years of age, with a small unattached tumour of the right ovary, not much larger than a child's head. The uterus was central and normal; the family history was fairly good; she was sallow, very thin, and habitually chilly.

She returned for operation in the following October. The tumour extended as high as the ribs on the right side, midway between the umbilicus and false ribs on the left. To the right there was an extremely tense prominent cyst about the size of an adult head; the rest of the tumour was semi-solid. The uterus was now drawn upwards to the right, and Douglas's space was filled by a portion of the tumour. It was, however, quite free in the pelvis: the girth was thirty-four inches. The general health was still good; the tongue was furred and red at the edges. She suffered much from flatulent distention, and pain was sometimes troublesome, while the pressure of the tumour in the pelvis gave rise to obstinate constipation.

On the 11th of October—three days after she came to town—she had passed a bad night from acute abdominal pain. The appearance of the abdomen was quite changed—the tense prominent cyst had become flaccid, and the upper part of the abdomen tympanitic. The girth was only thirty-one inches: by evening the outline of the cyst had quite disappeared, and the measurement at the umbilicus was only twenty-nine inches.

She was kept quiet in bed, and fomentations applied. Next morning the whole body was covered by an intensely bright eruption, which remained for four or five days. There was no increase of kidney secretion, but the skin acted very freely. In a week she was out of bed, and the physical signs of free fluid in the abdominal cavity had quite disappeared.

The cyst gradually refilled, and on the 24th—the day before operation was fixed upon—it again gave way. The symptoms were more severe than on the former occasion: there was more pain, and, if possible, a more copious eruption. In ten days the fluid had again become absorbed, and she was able to be out of bed. She was now extremely reduced.

Ovariotomy was performed on the 11th of December, the cyst having already partially filled. The large cyst was emptied, and as it was carefully drawn forward, it gave way at its upper part, where the ruptures had taken place. There were two small openings covered over with a thick layer of recent lymph, and some very slight intestinal adhesion. The surface of the cyst was intensely vascular; the omentum and intestines of a bright rose colour, showing signs of recent inflammation. The cyst was freely opened. It contained some thick albuminous fluid. The hand was then passed through it, and the semi-solid portion, which weighed seven pounds, was broken up. The part which occupied Douglas's space was easily turned out; it was nowhere adherent in the pelvis. The pedicle was so short that there was just room to apply the clamp, the angle of the uterus being brought into the wound.

The symptoms for some days after the operation were the same as after the ruptures, without the eruption. Some distention, with hardness of the abdomen and a rather high temperature, caused some apprehension for a few days that the chronic peritonitis, which existed at the time of the operation, was going on. These symptoms soon disappeared, and she went home to Montrose four weeks after operation.

CASE LI.—*Multilocular Ovarian Tumour. Ichthyosis. Both Ovaries removed. Recovery.*

Mrs H., aged forty, came to me for ovariotomy in the end of December 1866, at the recommendation of Professor Dyce of Aberdeen. The tumour was detected in September 1863. She was first tapped in July 1864, when four months advanced in her second pregnancy. Three gallons and a quarter of fluid were then removed. She went on to the full time, and for thirteen months no perceptible increase took place, till she gave up nursing. She was a second time tapped by Dr Dyce in October 1865, when three gallons and a half were removed, and the solid portion of the tumour was found to have increased. Two months afterwards, when she came to me, her girth was forty-four inches. The wall was still flaccid, and there was coarse crepitus almost all over the abdomen. The uterus was high, central, and movable, and there was no evidence of any local difficulty.

The general condition, however, did not seem to be a favourable one for ovariotomy. She had had ichthyosis from her childhood. She was thin, fragile-looking, and somewhat anæmic. She never perspired, and her hands and feet felt like horn. She was always chilly; the pulse about 90, feeble and intermittent. One of her sisters had also ichthyosis, and another had died of phthisis.

The state of the skin having been somewhat improved by the daily use of the warm bath, ovariotomy was performed on the 2d January 1867. The cyst was exposed by an incision four inches in length, tapped, then opened to admit the hand, and the semi-solid portion—the size of a cocoa-nut—broken down and easily removed, after separating a piece of adhesion the size of the hand above the umbilicus, and a smaller and firmer portion in the right iliac fossa. Here the peritoneum was torn, and a ligature was required to a bleeding point. A rather thick pedicle was secured by the largest sized clamp, an inch from the right side of the uterus, and as the left ovary was enlarged and diseased, it was also removed, the end of its pedicle being secured to the clamp. The whole weighed thirty-five pounds.

There was some chloroform vomiting in the afternoon. The state of the skin, and the total absence of perspiration, gave rise to some anxiety for the first day or two; there were, however, no unfavourable symptoms. Metrostaxis came on two days after operation, and continued three days. She looked extremely anæmic during her convalescence, but left by the morning train for Aberdeen, quite alone, on the 2d of February, one month after operation. Dr Dyce wrote me some time afterwards that she continued quite well.

CASE LII.—*Dermoid Cyst. Twice Tapped. Very firm adhesions to Uterus, Bladder, Iliac vessels, and in Pelvis. Death six days after Ovariotomy.*

In May 1866, Mr Armstrong of Brampton took me to see a single lady, forty-two years of age, in whom he had detected an ovarian tumour towards the end of 1864. From childhood her health had been extremely delicate, and she was the only one of her family who survived. In February 1865, soon after the tumour was noticed, she had such a severe attack of peritonitis that, for a week, it was thought not possible she could live. As her girth was found to have diminished considerably after this illness, it seems most probable that some of the contents of the cyst had escaped into the cavity of the peritoneum. The pain was most acute low down in the left iliac region. An attack of phlebitis in the left leg followed, and for some months she was unable to walk. Since then the tumour steadily increased. She had rather a feeble heart, was pale, and very fat. The measurement at the umbilicus was forty-two inches. The cervix uteri was low down and far back in the pelvis. It seemed movable, but no very careful examination was then made, as it caused pain. The general condition was certainly not a good one, but there did not at that time seem to me to be anything in the case to contra-indicate operation, and it was agreed that ovariotomy should be performed.

On more careful examination after a few days, the state of matters in the pelvis did not appear satisfactory. The cervix uteri was movable, but the body of the uterus felt lost in the cyst, which was pushed downwards into the pelvis. It was thought better, therefore, to have a preliminary tapping, and a small pailful of thick fatty matter was removed. The cyst was scarcely emptied, for some pieces of fat choked the instrument. For some days there was a good deal of feebleness and disturbance of system, but she returned to Cumberland a fortnight afterwards, not a little disap-

Wound quite dry; abdomen flaccid,—flatus passing freely downwards.

Third day.—Quiet night; no vomiting. It recurred severely during the day, exhausting her very much. Some fæces washed out from the rectum. Douglas's space quite empty. Day passed much as yesterday, but is weaker. Pulse 135. Face hot and flushed; no perspiration, but urine is very plentiful, and quite clear. Wound quite dry; abdomen flaccid.

Fourth day.—Fairly quiet night. Wound looking quite dry and united; abdomen flaccid. Carefully examined the pelvis, but could not detect anywhere the presence of fluid. Douglas's space quite empty. Flushing of face and fever still continues, but says she feels quite comfortable, and her expression is pretty good. She is, however, much more feeble. Pulse 140–145. The respiration is somewhat sighing. Urine very clear and copious. Towards evening she was much disturbed by flatulence. Feeling sure that there was a collection of fluid somewhere in the pelvis, the lower stitch was removed and the adhesions slightly broken up. Only a little red serum flowed. A female catheter was then passed down several inches along the pedicle. It became filled with bloody purulent matter. The opening was then enlarged to admit the finger, and the cavity washed freely out, first with warm water, and then with Condy's fluid. This was repeated several times during the night, and some drainage tubes left in. The pelvis was also carefully explored by the catheter, with the finger in the vagina, but no other collection of fluid could be detected, and the utero-vesical pouch, which at the time of the operation was observed to be very deep and large, contained no fluid. On allowing the washings that had been injected to settle, about ten ounces of purulent matter were obtained. The matter which drained off at first was of a very dark red colour, containing a large quantity of blood.

Fifth day.—In the morning looked much relieved, and continued so till mid-day, when a very violent access of fever came on. Condy's fluid injected as before, but little or no discharge, and the cavity only contained little more than two ounces. No other collection of fluid could be felt anywhere. By evening she was much exhausted, and became very restless. The pulse had risen to 150; temperature 103·5°. Abdomen quite flaccid, and urine continued to be secreted in large quantity. She died quietly on the morning of the sixth day.

The body was somewhat emaciated. The abdomen not the least distended. Cavity of abscess small, empty, and healthy-looking. Douglas's space contained nearly an ounce of bloody serum, quite shut off by slight adhesion between folds of small intestine from the abscess above. In the right side of pelvis, over the iliac vessels, where the adhesion had been separated by the knife, was a second flattened circumscribed cavity containing about four ounces of red grumous blood. In the neighbourhood of both these abscesses the intestines were adherent, but there was not a trace of general peritonitis.

The intense chloroform sickness on the afternoon of the operation so completely prostrated this patient, that by the evening I felt that her chances of recovery were almost gone. It seems probable that, soon after she was placed in bed, some oozing of blood, such as was seen to happen during the operation, took place in the pelvis during the excessive and prolonged efforts at vomiting. The powers of repair were unable for the absorption of this blood, and it passed quickly into suppuration. There was no blood-poisoning in this case. Death took place from pure exhaustion. A woman with more constitutional vigour would readily have survived; for, with the exception of the second small collection of blood and pus which, though eagerly sought for before, I failed to reach, the after examination showed only traces of nature's healthy repair of a great injury. Had there been no chloroform vomiting, there would most likely have been no effusion.

CASE LIII.—*Both Ovaries removed. Recovery.*

This patient, forty-two years of age, unmarried, was sent to me on the 9th of February 1867 by Dr Junor of Peebles. She had been aware of the existence of a tumour for about five years, but as it gave rise to no inconvenience beyond what arose from its bulk, she had not consulted anyone about it till three months before, when, on account of her failing health, Dr Junor saw her and explained the real nature of her complaint. She was very thin, but her general appearance was healthy. The circumference at the umbilicus was forty inches, and the cyst could be seen moving freely with the respiration. The uterus was low in the pelvis, but movable.

A very favourable prognosis was given, and ovariotomy was performed on the 12th of February. The cyst was emptied and removed through a small incision. It was then found that there was no proper pedicle; both broad ligaments seemed to be involved in the cyst, and a very broad expansion went off both towards the cæcum and rectum; so that when this thick base was secured in a very large clamp, there was a good deal of pull on both sides of the pelvis. The left ovary, enlarged and corrugated, was then found close below the clamp. It was transfixed, tied, and secured outside, causing, however, some prolapsus of the pedicle. Only one suture above the clamp was necessary; for the pedicle was nearly the thickness of the wrist, and almost filled the wound. The parts were left in by no means a satisfactory state, owing to the strain upon the pelvic tissues. I could not, however, make anything better of it, and was not, in consequence, surprised at the suppuration which followed.

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For some days this patient did very well. There was no pain, no vomiting, and no opium was required. It was observed, however, that the respirations were never under thirty—sometimes as high as thirty-six. Metrostaxis came on on the second day, and lasted four days. After five or six days, the tongue got red and dry, there was pain from flatulence, some distention, and a tendency to diarrhœa. The pulse ranged from 105 to 120 for the first three or four weeks. The temperature varied from 101° to 103°. The urine was scanty, and perspirations were profuse. On three different occasions, on the twelfth, fourteenth, and twenty-first days, I evacuated by a long trocar collections of pus in different parts of the pelvis. She became extremely emaciated, and, from first to last, had much suffering, which was very cheerfully borne. She returned to Peebles on the forty-third day after operation. I saw her lately looking the picture of health.

In this case, in hopes of arresting the chloroform vomiting, which proved so distressing in the previous case, anæsthesia was produced by a mixture of three parts of sulphuric ether, one part of alcohol, and one of chloroform. Insensibility came on quite as rapidly as with chloroform alone. Since then I have used sulphuric ether by itself, or with one-fourth or one-fifth of chloroform, in eight cases of ovariotomy (of which seven recovered), as well as in every surgical operation which I have since performed. In none of these instances has there been the troublesome vomiting which, in my practice at least, has so frequently followed the use of chloroform, especially after ovariotomy. On two occasions during the operation, a mouthful or two of frothy mucus was vomited, but in none was there any sickness after the patient was placed in bed. Generally speaking, little harm, sometimes perhaps good, is done by a patient being well vomited by chloroform after most operations. No one can deny, however, that after the removal of a very adherent ovarian cyst, where there is the risk of bleeding into a shut cavity, vomiting must be a great evil.

(*To be continued.*)

ARTICLE IV.—*On the Curative Virtues of Milk.* By JOHN TATAM BANKS, M.D., M.R.C.P. Lond., Lincoln.

HAVING long since been acquainted with the remarks of Dr Chambers and others, and my attention having more recently been called to the writings of Dr Karell and Dr Carrick of St Petersburg, on the efficacy of *milk* as a remedy in numerous obstinate disorders of the system,—especially in chronic derangements of the liver, the stomach, and bowels,—I was induced to try its dietetic and curative virtues.

Milk—the first food of man—is the only nutritive fluid with which nature has provided us, and may be considered as intermediate between animal and vegetable food.

Health cannot be maintained unless the food contain certain constituents,—and in milk are found all the elements necessary for the nutrition of the body,—as will be seen by the following table by Dr Letheby of London, which shows the proportions of the various substances and its nutritive value :—

Substances, 100 Parts.	Water.	Fibrine Albumen, etc.	Starch, Sugar, etc.	Fat.	Salts.	Carboniferous.	Nitrogenous.	Total Nutriment.
Human milk, .	89	3·5	4·2	3·0	0·2	11·4	3·5	14·9
Cow's milk, . .	86	4·5	5·0	4·1	0·7	14·8	4·5	19·3
Skimmed milk, .	87	4·5	5·0	2·7	0·7	11·5	4·5	16·0
Butter milk, . .	87	4·5	5·0	0·5	0·7	6·0	4·5	10·5

Milk, for the most part, is easily digested and readily assimilated, it therefore affords a quick supply of aliment to the system, while it does not excite that degree of vascular or nervous action, nor that irritation of the mucous membrane produced by other animal matters. In weak stomachs pure milk is sometimes too rich, and is difficult of digestion, owing to the presence of cream.

It must be remembered that, although recent milk appears as a homogeneous liquid, it is a compound fluid, and may be resolved into three proximate ingredients,—cream, curd, and whey.

Cream possesses many of the properties of oil, and, though highly nutritive, is found by many extremely indigestible. In such instances the milk should be skimmed,—that is, the cream should be removed from it,—for although this process doubtless diminishes the nutritive quality of the milk, it, at the same time, renders it more easily digestible.

The nutritive powers can be increased, when required, by the addition of stale bread, semolina, tapioca, sago, or oatmeal gruel.

In those functional states of the stomach marked by an habitual acidity and heartburn, or an occasional excess of acid, a variety of antacid remedies may be given with advantage, especially lime-water. Alkalis not only neutralize the acid, but also tend to prevent coagulation of the milk in the stomach,—and thus the milk will pass more easily in a liquid state into the bowels,—so that the work of digestion can, when desirable, be performed by them rather than by the stomach, whose function may, when necessary, be rested.

I will now briefly relate one or two cases, selected from many others, where the rigorous methodical administration of milk, varied, of course, according to circumstances, in each individual, with avoidance, for the most part, of all other kinds of food, exercised the most salutary influence in rectifying disordered function, and in restoring the strength and health of the patient.

In the summer of last year, Mr W. P., upwards of sixty years of age, a farmer, residing at Caistor, in this county, consulted me on account of severe dyspepsia, from which he had suffered many years, and for which (to use his own words) he had been frequently "doctored" in vain.

He complained of uneasiness in the right hypochondriac region, of pains across the stomach, flatulence, and great distress soon after eating; so sensitive and irritable was the stomach that even a mouthful of solid food became a source of disturbance. He therefore avoided food as much as possible, and "hardly knew how he had kept life in him."

There was no sickness, nor pain on pressure, except over the liver. The tongue was loaded, the bowels inclined to costiveness, with absence of bile; urine pale without any trace of albumen; there was restlessness by day, and sleeplessness by night.

In this exhausting state of things, with such disturbance in the absorption and assimilation of the food, and the process of sanguification, it is almost needless to add that there were great debility and prostration, both bodily and mental; indeed, the symptoms of brain disorder, owing to the constitutional state from which they sprang, were very distressing. The mind was extremely depressed and anxious, with confusion of thought, headache, loss of memory, want of interest in all pursuits, lassitude, excessive ennui, and a longing for death.

Feeling convinced that in this case the symptoms were owing to mal-nutrition, the treatment was directed to allay nervous and gastric irritability, and to improve nutrition. With a view to calm the irritation of the nerve-centres, and of remote parts through reflex action, a scruple to a drachm of the *bromide of potassium* was prescribed to be taken three times a day in a little weak bitter infusion, and the patient was restricted to a milk diet.

In the course of a fortnight I had the satisfaction of finding the tongue cleaner, the pain of the stomach less, and the head relieved. He complained, however, of extreme weakness, and on my learning that he had not exceeded four half-pints of milk daily, nor had partaken of any other food, I requested him to increase the quantity to four pints, with a little oatmeal gruel added to the milk twice in the day. The bromide of potassium to be discontinued.

After his perseverance for five weeks in this regimen, I wrote to him to ascertain his state, and in reply received the following note:—

"*Caistor, Sept.* 1866.

"Sir,—In answer to your request, I take the liberty of addressing a few lines to you.

"I took four pints of milk daily as you directed, but soon found that it was too much for the stomach to digest. I therefore commenced to take only three pints, which I find to agree much better. My head is better, the tongue cleaner, the stomach stronger, the bowels more regular, and my strength greater. I now begin to hope that, by the blessing of Providence, with patience on my part, I shall once more be restored to a moderate degree of health, which, at one time, I had not the slightest hope of ever enjoying any more."

A few days ago (8th Feb. 1867), Mr P. called upon me, and informed me that he continued to live chiefly upon milk and biscuits, with a little meat and some light pudding once a day, and that he now felt "almost as well and comfortable as ever he did in his life."

I will add another case.—Mr H. M., aged 27, one of the managers of the iron foundry at Gainsborough, sent for me to meet my friend Dr Duigan in consultation. I found the patient confined to his bed, the complexion and mucous membranes pale, skin cold and clammy, pulse slow and feeble, nights restless, tongue not much coated, the papillæ rather elevated and red, bowels relaxed and flatulent, with an almost constant sense of uneasiness in the lower part of the abdomen, aggravated on waking about five in the morning, urine loaded, appetite bad, nausea and vomiting after food which nothing had hitherto allayed, loss of flesh and of strength. The head undisturbed. Auscultation disclosed faint cardiac anæmic murmur, but no organic disease of the heart or of the lungs, pressure over the stomach and abdomen occasioned no pain, except over the left lobe of the liver, where there was passive vascular congestion and enlargement, depending probably on faulty assimilation and digestion, and perhaps also on a recession of blood from the surface of the body. These symptoms he had experienced in a more or less degree for nearly two years, and he had consulted the late Dr Brinton of London, and many other eminent medical men in England and abroad. The nature of his occupation had induced sedentary habits, and the powers of the brain and nervous system had been much over-taxed.

Bearing in mind the good rule "Festina lente," and the old motto from Celsus,—"Multi magni morbi curantur abstinentiâ et quiete,"—and the want of success which had hitherto attended all former medical treatment,—Dr Duigan and I were induced, after careful consideration, to leave more to Nature than we are in the habit of doing; in short, *to allow the stomach to rest*—to interfere by medicine as little as possible,—and to rely upon a milk diet as being unstimulating and nourishing, and best suited to the impaired powers of the stomach. The baneful influence of over-mental anxiety and fatigue on the exhausted bodily organs and general health was pointed out, and we endeavoured to impress upon the patient that

> "Our foster-nurse of nature is *repose*."

Warm nitro-hydrochloric acid baths were recommended; and, to allay the uneasiness, frictions with a sedative embrocation were ordered, and hot fomentations were directed to be frequently applied over the hypogastrium, and the surface of the whole body to be kept warm. To check the diarrhœa, a drachm of the *extractum belæ liquidum* in a little water, three times a day, or as required, was prescribed.

The patient was requested to take half a pint of skimmed milk every four hours, with a little biscuit twice a day, a small quantity of egg-pudding at noon, and to abstain from all other food.

At the expiration of a week I again visited him. He was sitting up and looked cheerful. He said the uneasiness in the body was relieved, the diarrhœa and flatulency less, no vomiting, and only a slight sense of sickness after eating. A desire for more food being expressed, the allowance of milk was doubled. A pint of milk every four hours seemed to oppress the stomach, and he took therefore half a pint every two hours, with biscuit twice a day, and some egg-pudding or rice-pudding for dinner.

This plan of treatment afforded great amelioration of the irritation, and of nervous and vascular action. After pursuing it strictly for some weeks, the congestion and functional disturbance of the liver disappeared, the appetite and digestion were much better, so that he could relish and digest a mutton chop or poultry for dinner. The strength and spirits improved under this diet, the sickness and pain subsided, the night's rest became undisturbed and refreshing, the skin warmer, and the general health was so much invigorated that he was able to resume his business without inconvenience.

Having forwarded the above statement of Mr Marshall's case to Dr Duigan for perusal, with the request that he would make any suggestion or correction he thought necessary, I received from him a note to the following effect:—

"Dear Dr Banks,—Your report of Mr Marshall's case is so full that I have nothing to add. He is not well yet, but he has much improved. There is no doubt that the exclusive diet was the main cause of his amendment.—*Gainsborough*, 28*th September* 1866."

When I last saw Mr Marshall at Lincoln he was much better, and reported himself as feeling very much stronger.

In the cases I have related it is, I think, evident that by the strict attention to diet and the regular employment of *milk*, considerable important chemical changes in the blood and in the body were promoted, a thorough change of nutrition or of the constitution was effected, and the good results I have stated obtained.

Upon the normal constituent elements of the blood, health, I conceive, depends; and where there is an altered and impure condition of it, local diseases and ailments of different kinds supervene. The blood may be deteriorated in various ways,—from errors of nutrition, by the retention of what should be discharged, or the loss of what should be retained, or by deleterious matter carried into it. These morbific matters are "sent, through the rivers of our blood," to all parts of the economy, deranging the functions of the body, producing serious disorders of the brain and nervous system, prostrating the energies, and affecting the vitality of the frame.

Milk has long had a high reputation not only for its dietetic but also for its *curative* virtues. In the quaint and witty pages of Fuller, in his "Worthies of England," we read of one Dr Attwell, who was living in 1602, "well seen in the theoricks of physick," who, "although he now and then used blood-letting, he mostly, for all diseases, prescribed *milk*, which, either by virtue of the medicine, or fortune of the physician, or fancy of the patient, recovered many of desperate extremities."

I do not wish it to be inferred that I regard milk as a panacea or even wholesome in every case, for, as Van Swieten has justly said, "to assert a thing to be wholesome without a knowledge of the condition of the person for whom it is intended, is like a sailor pronouncing the wind to be fair, without knowing to what port the vessel is bound."

Although food judiciously selected may act as medicine, it is equally true that it may act as poison if improperly administered. Dr Parkes observes that probably 30 per cent. of the persons who consult physicians owe their diseases in some way to food. The great art of medicine (as well expressed by Boerhaave) is "the application of the proper medicine, in the proper dose, at the proper time."

In the treatment of diseases, no regular rule strictly applicable in all cases can be laid down; their successful management must ever comprehend a multiplicity of details essential to their cure. But I am inclined to think that many diseases which depend upon, or which have induced a morbid condition of the blood, or where there is disorder of the hepatic, gastric, and abdominal circulation, and a state of perverse or deficient nutrition, may be brought under control by *air and exercise, and a judicious adaptation of food*, without the employment of much medicine; and that *milk*, administered in definite doses and at regular intervals (the quantity given being carefully diminished or increased under the guidance of the appetite for food), will be found a valuable alterative and efficacious remedy.

ARTICLE V.—*Two Papers by the late Dr Adams of Banchory.* Communicated by Dr A. LEITH ADAMS, 22d Regiment.

I. ON THE ADMINISTRATION OF NARCOTICS TO PREGNANT WOMEN.

I HAVE long been convinced that the administration of opium in full doses to pregnant women is highly dangerous to the child, and wish to call attention to the subject as being a point of great practical importance which would not appear to be sufficiently attended to. It must have struck every person of experience how easily infants are narcotised by opium. It has been affirmed that a single drop administered to a very young child has proved fatal. Mothers giving suck have frequently told me of the striking effects which opium and other medicines, taken by themselves, have produced on their sucking infants. One may readily infer, as the relation between the mother and child during gestation is more intimate than during lactation, that any powerful substance affecting the nutrition of the mother must have a still more powerful effect on the child in the former case than in the latter; and experience proves this to be the fact. A good many years ago, a midwife, whilst describing to me the case of a female of my acquaintance whom she had lately delivered, said, that when called to the woman, as she found that labour pains were slow of coming on, she gave her patient "a good large dose of laudanum," which suspended the process for about six hours; afterwards the pains set in strong, and in a very short time the child was born. I asked, "Was it alive?" The woman *naively* replied, "She never was more disappointed in her life, for that it was a remarkably fine, plump child, but was born in a dying state, and in spite of all she could do it never could be awoke from the lethargic condition, and died soon afterwards." I cautioned the worthy obstetrix against using the same medicine in future. I think I am also confident that opium given in cases of threatened abortion almost invariably ends in the expulsion of a dead fœtus, and therefore I think it should never be given unless when all hopes of prolonging gestation are gone. From personal experience, then, and reasoning from analogy, I cannot but think that the administration of opiates to pregnant women ought to be proscribed. I should be glad to know what is the experience of my professional brethren in such cases, as my attention has been lately directed to several published cases of a nature similar to that here stated.[1]—*Banchory, Sept.* 22, 1858.

II. ON A VARIETY OF IMPETIGO CONTRACTED FROM CATTLE.

The following interesting particulars with reference to a form of impetigo, of common occurrence in the north of Scotland, are here published, I believe, for the first time.—A. L. A.

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[1] This paper was found among my father's posthumous MSS., and is seemingly unfinished.—A. LEITH ADAMS, M.B., Surgeon, 22d Regiment.

"Though the disease, of which I am about to give a short account be very commonly met with among persons who are employed attending cattle, I am not aware that it has ever been described in any professional work. In the district where I reside it is well known, and I have met with very many cases of it during the last twelve or fourteen years. Whether or not it prevailed previously I am not sure; at all events, I had not my attention turned to it at an earlier period of my professional life. The disease in cattle from which it originates is called *cany* in the north of Scotland, and would appear to be some variety of the mange. It attacks cattle generally about the head and neck in the form of extensive scabs, which drop off, and are followed by a falling out of the hairs on the spot, and a dryness of the skin around. It evidently is contagious, since, whenever it attacks one beast, the others become affected when brought in contact with it. The farmers find it obstinate to cure, and have recourse for its removal to various stimulant applications, most of them containing sulphur. Though the cattle affected with the disease fall off in flesh, it never is known to prove fatal. I am inclined to think that cattle grazing in the field are scarcely at all subject to the disease. Now, it is ascertained, by general observation, that this complaint is often communicated to the persons who attend to the feeding of the cattle in their stalls. In the human subject it generally attacks the hands, the face, and the neck; that is to say, the uncovered parts of the body, and presents a variety of appearances, which, upon the whole, bear a good deal the same resemblance to the disease when it affects the cattle. It usually displays itself in the form of small pustules, which break out in clusters, sometimes of small size, and at others extending over considerable patches; the skin, at the same time, becomes thickened and red, and is attended with painful tingling or itchiness. When seated on the forehead, the hairs of the eyebrows are apt to fall out; and when it appears on the upper part of the head, it leaves patches denuded of hairs like the area of ringworm; only it is invariably attended with more scabs than is the case in porrigo decalvans. It also differs from the latter in sometimes spreading over a considerable extent of surface not covered with hairs. In a very few cases, perhaps from some constitutional peculiarity, I have seen a large part of the trunk affected with a similar tetter. Though not a disease of a serious nature, it sometimes proves rather troublesome to remove; and the practice must, of course, be varied agreeably to the circumstances of each case. At first it generally answers to apply poultices until the scabs are all fairly removed and the skin has lost its irritability, when strong citrine ointment may be rubbed in at night and carefully washed off in the morning. This will generally have the effect of curing the disease in the course of a week. At other times, however, more stimulating applications must be had recourse to, of which the most efficacious I have tried is one consisting of the oleum laurinium with sulphur and powder of hellebore.

The cure would, no doubt, be expedited by the use of the vapour bath; but it, I need not say, is not often to be readily procured by the class of patients who are most apt to be attacked by this disease. As a general rule, constitutional remedies are not required, as it is only when the disease of the skin is extensive that there is any disorder of the general health. This, however, is rather a rare occurrence. It is not so contagious as either scabies or ringworm, and repeated observations have failed to discover the presence of an acarus in the exuviæ or parts of the skin affected. It resembles porrigo decalvans in another character, and in so far differs from the other varieties of impetigo that it is undoubtedly contagious. That it is contracted from contact with cattle is a fact about which there can be no question; and after paying a good deal of attention to the disease in its forms, I am now satisfied that it can be imparted from one human subject to another. In one instance I was fully convinced of this having occurred."

Evidently a portion of the MS. is here wanting.—A. L. A.

ARTICLE VI.—*Remarks on Placenta Prævia, with a Case.* By ALEXANDER MILNE, M.D., L.R.C.P. & S.

(*Read before the Obstetrical Society, April* 24, 1867.)

CASE.—On the 3d of January last, I was called to see Mrs L——, æt. 26, residing in No. 12 West Richmond Street, who had been seized with a flooding in the morning while moving about the room. She informed me that she was pregnant with her first child, and that when the discharge began, it was unattended with pain, and was not the result of any physical exertion. On inquiry, I found that she last menstruated the first week of July; she would therefore be about the middle of the sixth month of utero-gestation. I could not well calculate the amount of the hæmorrhage, because part had escaped on the floor; but judging from the woman's account, and what I saw on a towel, there would probably be a few ounces. It was dark and venous-looking.[1] I ordered rest in the horizontal position, a little ice by the mouth, and nutritious diet; and as the flooding had almost ceased, I withheld anything in the shape of astringents. On calling next day, I found there was little more than a few stains on the linen. On the 12th of January, there was another free oozing, and still unaccompanied by pain. Mrs L—— was rather alarmed, and her pulse somewhat quickened, but not feeble. I enjoined a continuance of the previous treatment, with the addition of moderate quantities of wine, and to begin with ℳxxx of the liq. ferri pernit. three times a day after food. Next day the hæmorrhage had much abated, and was almost *nil.* There were discharges after this from time to time—moderate, and less—with intervals of entire cessation, but the flooding always abated to subsidence in the course of from 24 to 48 hours. On the 15th of February, a rather alarming amount came away, and it was retained for my inspection. I found it to consist of dark-looking coagula to the amount of nearly two breakfast cupfuls. Patient said she had still not the slightest pain; but I passed my finger to the os in order to see if it were dilating at all—as gently as possible of course—but it would not admit the point of the finger. I therefore contented myself with ordering a continuance of recumbent rest, nourishing soups, wine, and a persistence with the iron. Things went on in this way until Sunday the 17th of March, when a serious flooding took place, accompanied with, or rather preceded by, pain. On my arrival at one o'clock P.M., I found the pains very moderate and slight, but recurring regularly, with a profuse escape of blood. Mrs L—— was pale and agitated, and her pulse was somewhat feeble and frequent. She was, however, cheerful and hopeful, and this condition of mind I endeavoured to foster as an element contributing to her welfare. I gave her two ounces of brandy in a little cool tea. On examination, I found the os dilated to about the size of a florin, but rather rigid and unyielding. I could at once detect the placenta as the presenting part; and by making the finger describe its circumference, I could feel the placenta adherent all round the cervix. Its edge could not be felt in any one direction; no part more attenuated than another could be discovered; and as a matter of course no part of the membranes could be detected. Something bulky and hard could be felt on pressing up the placenta, but I could not be certain, but only conjectured that it was the head. On withdrawing the fingers, they were profusely besmeared with blood, and clots came away from the vagina. I resolved to operate immediately, seeing that the hæmorrhage was considerable on the accession of the pains. Chloroform was administered carefully by Mr Thomson, Nelson Street, who had joined me with Mr Suttie (both intelligent pupils at the New Town Dispensary); and Mrs L—— was brought to the edge of the bed. I then introduced my left hand gradually into the vagina, which (being a primipara) was very much contracted, until I reached the os. Two fingers found entrance; but it took about half an hour of semirotatory movement to dilate sufficiently for the whole hand to pass, during which time I had to withdraw it twice or thrice on account of the fatigue occasioned by the compression of the os. Little blood, however, came away during the process. I then, after considerable force, separated—indeed almost tore—a portion of the placenta from the cervix posteriorly (this locality being preferred, as we had fancied we heard the pulsation of the fœtal heart to the left of the middle line), when the membranes began to bulge, and were forthwith ruptured. I felt first the cord, then the head, and lastly reached a foot, and brought it down. The passage of the trunk demanded strong traction; and before the head was got clear of the exceedingly tight os by which it was firmly grasped, ten minutes elapsed, and the funis ceased to pulsate. Fifteen minutes having been occupied with the delivery of the child, and more severe traction being required than I ever remember to have used, with one or two exceptions, and moreover, the cord having ceased to beat, I was prepared to find the child dead, but its heart was felt to pulsate, and I therefore committed it to the care of Mr Suttie, who by the usual means succeeded in restoring it in about half-an-hour. The placenta followed almost immediately, but no unusual flooding. Pressure was exerted over the uterus for a short time, and it contracted pretty well. A drachm and a half of liq. ergotæ was, however, given by way of making "assurance doubly sure." Mrs L—— has gone on well since; and though her pulse is still rather quick and feeble, and she is somewhat blanched-looking, she is (March 24) gaining strength every day. The infant is also doing well.

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[1] The blood lost in these cases is generally venous in its character, but it is still an unsettled question whether the hæmorrhage springs from the uterine veins, as Dr Tyler Smith thinks, or through the placental cells and from the openings on the surface of the placenta, according to Sir James Simpson.

On inspecting the placenta soon after its delivery, we found it to be, as is common in these cases, thinner and of greater superficial extent than ordinary. It was slightly torn near the edge, where forcibly separated by the fingers, close to the perforation in the membrane.

Remarks.—Perhaps I owe an apology for detailing this case at so great length, seeing that there is little of a novel nature either in its history or treatment, but I had a desire to call attention to one or two points connected with the case and the subject generally; besides, a thoroughly successful case of placenta prævia cannot be altogether uninteresting to the obstetrician.

The first point I would direct attention to is the early period at which the hæmorrhage appeared—the middle of the sixth month. On glancing at many recorded cases, I find that the first flooding happened generally somewhat later; but that it should appear so early seems not an unnatural feature to those who believe in the early expansion or distention of the cervix. This early distention, I may just remark in passing, is stoutly denied by such able observers as Weitbrecht, Stoltz, Matthews Duncan,[1] and Cazeau; but I would ask, does not the flooding in placental presentation support the view that it does take place at an early date? And if the cervix is thus expanded, it surely cannot occur without, but must involve a certain amount of development, which is denied by these authors. Of course this difficulty may be got rid of by adopting the view that the growth of the placenta, wherever situated, involves, or provokes, or generates a commensurate increase at the part to which it is attached; and if this be the case, then the early growth of the cervix is an abnormality, and the offspring of another abnormality, viz., the misplaced placenta. Whichever be the correct view—whether early development of the cervix be normal or abnormal—early growth or expansion is in these cases undeniable, and even indispensable, for did it not take place, the placenta would cease to grow: it would become a withered and stunted and blighted thing.

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[1] See article in this Journal for September 1863, by Dr Matthews Duncan, wherein this subject is very ably discussed and illustrated.

Another point worthy of remark is the long period that elapsed between the first flooding and the advent of labour pains. Is it usual to find the hæmorrhage going on at intervals for ten weeks, without inducing painful uterine contractions? I think not. Is it not rather usually found that the irritation due to the implantation of the afterbirth on the cervix, together with the flooding arising from its detachment, tend to excite the uterus, and to precipitate labour a considerable time before the full period of pregnancy? It did induce it prematurely in this case (a month before the full time), but not at so early a period as I should have looked for.

Treatment.—Turning now to the treatment, it will be observed that I adopted the plan usually followed when practicable; at the same time I confess that the introduction of my fingers into the os, while a necessary preliminary, was also a tentative proceeding in this case. It was tentative, because I did not know precisely the condition of the placenta; that is to say, whether it was firmly attached to its site or not. Had I found it severed to any considerable extent—loosened from its connexion with the cervix so much that there was no chance of the child deriving benefit from it—I should have preferred removing it, as the first step.[1] I should also have unhesitatingly followed Sir James Simpson's line of treatment, had I had to deal with exceedingly profuse flooding, a profoundly exhausted patient, or where turning was inadmissible from this prostration, or from other causes, such as a too contracted condition of the pelvis or a tetanic state of the womb. If the child had been dead or non-viable, I should also have made the third stage precede instead of follow the delivery of the child. These conditions I need hardly say often obtain and imperatively demand the treatment indicated. None of them, however, existed in the case under review; therefore I resolved to separate a portion of the placenta and go in quest of a leg. This is the best method where there is but moderate hæmorrhage, a living child, a mother *not* at death's door, a fair prospect of version, and an unloosened placenta. Its advantages are several. You expedite labour, you arrest the bleeding, you do not necessarily destroy, but offer a chance of life to the child. By this method alone have you a fair prospect of rescuing the infant, as well as its mother, from the gaping jaws of death! But if the placenta be pretty firmly adherent round and round, and not very easily separated, and no thin portion be felt towards the edge, would it not be a better plan to tunnel right through it with the fingers, and thus reach the foot of the child? I do not think so. It is a plan that has few supporters, and I heartily join the majority in condemning it. It is true that Mohrenheim[1] and a few others recommended it, and Smellie[2] too once practised it, but it was more from a kind of doubtful necessity than choice. Its advantages are *nil*, while its dangers are more than one, and its difficulties not inconsiderable. Take the latter first. You may find the perforation of it, like the opening up of Japan or the North-west Passage (if we may compare small things with great), by no means an easy matter. For example, in pushing up the fingers and applying force, the placenta, as I have found, instead of giving way, resiles, there being no counter-force—no resistance behind—nothing beyond that which it is enabled to offer as the result of its attachment to the cervix; you merely indent and extend it a bit, instead of tearing it through. The same thing often happens (and the analogy is suitable and striking) with the bag of membranes; for do we not often find these, though highly attenuated—though vastly thinner—resisting our attempts to perforate them with the finger, until the force of the water behind helps us to effect the rupture? Of course, a soft and friable afterbirth will be more easily penetrated.

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[1] This method was adopted in such cases by Guillemeau (Œuvres de Chirurgie, p. 320); by Mauriceau (Maladies des Femmes Grosses, tom. i., p. 333); and by Daventer and Pugh. Dr Radford advises it in similar cases.

Take now the dangers. These are by no means light. Instead of perforating, you may push up the entire placental mass; or, if you force your successful way, the aperture may be too contracted for the child easily to pass; or, again, you may tear extensively the placental vessels; and in either case, not to speak of maternal risk, the result is the exposure of the child to certain peril, and almost to certain death. The sweetness, therefore, said to spring from the saving of a life, is likely to be exchanged for the unwholesome bitterness inseparable from the losing of it in a case where loss was certainly not inevitable. I would disapprove of this plan, therefore, and only adopt it if driven to it (like the tempest-tossed vessel going to the nearest port), which misfortune can happen to us but seldom indeed—can happen to us only, in fact, if we fail to separate the placenta, or part of it rather, from its attachment to the cervix.

The Mother.—Coming now to the mother, who happily made a good recovery in the sense of rallying well from debility and having no untoward after-symptoms, while not pretending to claim credit for this, I may yet be pardoned for speculating briefly on the probable causes of her welldoing. During the ten weeks of her hæmorrhagic history she lost a good deal of blood, yet at the end of this period—that is, up to the commencement of labour—she was not

[1] Praxis Medico-obstetrica Mosquæ, 1810, p. 176.

[2] Case 8, No. 2, collect. 33.

reduced to very great feebleness, though she certainly was somewhat blanched-looking, and felt faint and giddy at times. Her pulse was not very firm, but it was not strikingly frequent. For a few days after the discharge she was a good deal prostrated, but she rallied again before a renewal of the flooding. I would simply ask, then, under this head, how much might be due to the dietetic treatment—the soups and the wine, etc.—and how much to the iron? The question is doubtless more easily put than answered, for in cases of this nature we cannot altogether eliminate conjecture. I for one, however, lay stress on the iron (and my patient was certainly well plied with it); it is a blood-making medicine emphatically, and, as we often see in anæmic cases, brings back in a few weeks the ruddy glow to the blanched and pallid cheek. There is an obvious caution in connexion with its use, viz., to obviate its constipating effect, every few days, with gentle laxatives, as straining at stool almost infallibly renews the flooding. It will be observed that the preparation employed was the pernitrate. This is doubtless the most suitable, for while tonic it is also one of our most reliable astringents, and by selecting it we are enabled to dispense with the other medicinal hæmostatics, such as gallic acid, tannic acid, and acetate of lead, which, though excellent astringents in many cases, often impair the tone of the alimentary canal, and render the patient unable to partake of those nutritious foods which are so essential in cases of this nature, or to assimilate them if taken. Yes, their use—the use of those astringents which are not tonics—may be said to be an abuse, for by them, while bestowing benefit, you entail also evil,—evil which it is to be feared outweighs the good.

But, further, while it was of the utmost importance in this case to stimulate highly in the afore-named way, medicinally and dietetically, with the view of repairing waste, of replacing lost blood, guarding at the same time against undue stimulation when the flooding was going on, it was of no less moment to act decisively and promptly when labour pains supervened, for then was the most critical time. This I think it will be seen was done, and with the best result; and here I should like to make a remark or two on the treatment to be adopted at this stage—the preliminary treatment, so to speak—that which, as a rule, these cases being generally premature, we have to face or encounter before the turning or the removal of the placenta, whichever treatment we elect, can be proceeded with. Well, then, hæmorrhage is going on and increasing with every recurrent pain, until a scant enough supply mayhap is left for the maintenance of the cardinal vital acts, and yet the os remains rigid. Entrance must be had with a view to efficient action, yet a gateway, so to speak, interposes, and bars admission. What, then, is to be done? Shall we apply the tampon and wait, or tunnel our gradual and cautious, yet persistent way, until the os dilates so as to admit the hand? I incline to the latter plan, and would recommend it. It was thoroughly successful in this case, and one or two others that have come under my observation. Some authorities in London—where they were as long a period in understanding or appreciating chloroform as the siege of Troy lasted, if they yet thoroughly apprehend it — some gentlemen there, and over in the capital of the verdant isle, and in other places, are very chary about fingering the os;[1] they are almost as much afraid to handle it as the rustic was to cherish the frozen viper, or as some of our surgeons are to try the needle instead of the thread in arterial bleeding. They say that it is fraught with danger, and clinch the statement with the threadbare aphorism (profoundly true in some circumstances and cases) that "a meddlesome midwifery is bad." Now, with all respect for these oracles, who are certainly less ambiguous than the ancient ones, I must say that I think the evils of manual dilatation have been overrated, and that the dangers so gloomily portrayed are nothing more substantial or less impalpable than the play of the fancy. Sanctioned by such a trustworthy trio as Smellie and Burns and Hamilton, men renowned and not often rivalled for practical skill, and supported by the *dii majores* of the Edinburgh school, and warranted by a now not very limited experience, I have dilated the rigid os with my fingers often when antimony and opium, and belladonna and the anæsthetic, and steaming had all failed, and even in truth not seldom without trying these relaxants, and I cannot recal a single untoward symptom as having sprung from the interference, but, on the contrary, I can reckon up incalculable good. We have now, I think, ceased to view the practice as dangerous, as we have ceased to consider with Hippocrates that wounds of membranous parts are necessarily mortal, and simply because we have profited by the plain teachings of experience. As the result, few of us, I rather think, hesitate much to handle the anterior lip when it is any way refractory, and even the posterior for that matter, if called for, and thereby, I am fully convinced, not aggravating, but abbreviating the suffering of the mother. Much more in placenta prævia is this interference necessary, for here

"It is the chief
Of all perfections to be somewhat brief."

But a word may be said in reference to the nature of the interference, which has doubtless been misapprehended by some. By manual dilatation we do not mean a forcible distention, even at the risk of laceration, but a gradual and persistent, though alternating pressure on the os, in order to wear out or fatigue its muscular fibres, and thereby to induce that relaxation of which it possesses the power as much as it does that of contraction. The kind of interference may in fact be likened to that of the besieging army which (whether animated by a merciful spirit or not) prefers wearing out the garrison by an occasional shot, rather than forcing a reckless and ruinous way through the walls of the citadel, and battering both it and its occupants to the dust. In this case I might have forced my hand into the uterus in the course of a few minutes, but I preferred the safer method which occupied half-an-hour.

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[1] "Almost all the English authorities, Dr Collins and all the Irish, object to digital interference for the purpose of dilating the cervix." (See Churchill's Midwifery, 4th ed., p. 252.)

Set about the dilatation of the os, then, I would say, whenever the labour pains begin, at the very latest,—earlier if there be a perfect cataclysm of blood; do it cautiously, but yet somewhat firmly and perseveringly, and an effectual entrance will gradually be achieved, unpurchased by pain or peril;—free from pain because chloroform is present, and safe from risk because we stop short of laceration. But may there not be a chance of inflammation being excited by this? The cervix is said by the Bennets and the Tilts to be very prone to this even when let alone,—almost as prone to run into the hyperæmic state as a modest maiden is to blush, or a cherry to redden in summer,—and it certainly has not been dipt, like Achilles, into any charmed stream to make it invulnerable. But yet, as before said, we find it, at least in the normally developed or gravid state, wonderfully tolerant of a long and liberal handling; and surely, too, the soft, gentle, and well-belarded fingers going up cannot be more calculated to injure than the hard head coming down, which descent is sometimes so impetuous and forcible as to lacerate the cervix, or even tear away a portion of the uterus itself;[1] the womb being thus its own destroyer—committing *felo de se.* Of course, when nature performs a painful prank of this kind, there is no one to blame; it is all right, and at the same time all wrong.

There is another thing to be noticed in connexion with this dilating process, viz., that, contrary to what might be expected, little blood is lost during its performance, the hand, as has been pointed out by different observers, proving a pretty effectual tampon of itself.[2]

The Tampon.—But now about the plug; what is its true worth and value in these cases? Will it arrest the hæmorrhage effectually and entirely? Certainly, we may stuff the vagina as full as an egg, plug it so securely with sponge or cotton wool that no blood may flow externally, but will internal bleeding be thus prevented? I suspect not.[3] The reason is this, that the uterus is never, even at

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[1] Cases of this kind are reported by Dr E. Kennedy, Dr Davis, Dr Johnston, and others.

[2] "By the pressure it exerts on the open vessels."—*Ramsb.*

[3] Dr Ramsbotham says, in his work (Obst. Med. and Surg., p. 414), "that by using the plug much blood may be collected within the cavity of the womb, even to the induction of a fatal termination."

Merriman (Synopsis, p. 127) says he thinks the plug ought not to be used when the bulk of the uterus exceeds that of a pregnancy of three or four months.

Gardien (Traité des Accouchmens, tom. ii., p. 419) also objects to the plug;

the full time, entirely filled by the ovum, but, on the contrary, room and verge exists and is created sufficient to contain an amount of blood fitted almost to prove fatal. Plugging, then, is not a very reliable plan here, so far as the conservation of blood is concerned—which is indeed the paramount concern; and in resorting to it, it is to be feared, we perpetrate something not unlike the folly of the ostrich when she plunges her head in the sand; we merely hide from our vision the danger that besets us. Yes; we shut out from our view the bleeding that is going on,—a discharge that, of course, would be even more impressive and striking and suggestive in its outflow than in its results, such as the blanched countenance and the feeble pulse.

I have heard some gentlemen, who do not trust it much as a means of arresting hæmorrhage, allege that it is useful in stimulating the uterus—in provoking labour pains! Now, this, in my estimation, so far from being an advantage or recommendation, is another ground for condemning it. We do not in these cases desiderate uterine contraction; passivity more than activity of the womb is desired. The reason is plain. Uterine contraction here involves loss of blood, and blood is what we wish to save. Nay, more; I will say that uterine action not only subjects the enfeebled patient to a process of blood-letting, but is an obstacle to delivery. This may seem paradoxical, but is as obvious as the preceding statement; for we do not in the majority of these cases rely on the womb at all, but take the delivery into our own hands; and in the accomplishment of it a contracting uterus will oppose us much, and is what we may pray to be delivered from. But further, granting that the plug did stem the weakening tide to some extent, it would by no means follow that relaxation of the os would be induced; for if the case were premature (and most of them are), then it would be premature to expect dilatation without some force. Flooding does not always or readily soften in premature cases, nor when the organ is to a greater or less extent undeveloped, as we see in abortions and polypi,—where, I need hardly add, in the one case we have often much trouble in hooking down part or whole of the blighted ovum; and where, in the other, we have no less toil in landing a fibroid, even when it is detached from the uterine wall. The plug, then, may remain in for a considerable time, and yet on its removal the work of dilatation may after all have to be begun. Much time is thus lost, and time here is blood; and blood, if not life itself, according to the old view, is one of the prime essentials of its existence. The plug, then, I repeat in conclusion, has little of worth wherewith to win our suffrage; its little good is out-

as did also Dr Hamilton. In Dr Lees' Clinical Midwifery, several cases are related where the plug was employed,—for example, cases 43 and 58, but without success, or, in other words, without saving blood. Dr L. in many cases also, instead of waiting for the dilatation of the os, chose rather to perform craniotomy! I for one would certainly work hard at manual dilatation before resorting to this extreme, which, however, may have frequently saved the mother's life.

weighed by greater evil. In other words, if by it you save a trifle of blood, by it you sacrifice even more, and lose also inestimable time; and time in such a case, as before said, is almost convertible with blood, and blood almost equivalent to life. Temporise not with it—delay not by means of it; for by doing so you may lose your patient's life!

The Child.—In connexion with the child there are one or two points I think worthy of remark. First, it did not seem to have suffered much by the mother's loss, by part of the vital stream being deflected and escaping externally; for though premature, and therefore smaller, it was neither lean nor shrivelled or puckered, but plump. It follows, therefore, that though the area of supply was more and more circumscribed by the repeated separation of parts of the placenta, by a compensating process, probably increased activity or augmented calibre of the remaining channels of communication, the necessary amount of blood was sent on. Thus we have another evidence of the resources, of the adaptive power of Nature; for she is full of wonders, and needs not the eloquent but fanciful additions of a Goldsmith or a Chaillu in order to awaken both our admiration and our awe.

Secondly, I would call attention to the escape of the infant. Without claiming any credit for it, I venture to say that it was something wonderful. The time occupied in delivery after the leg was seized (owing to the rigidity and contraction of the uterus), was about fifteen minutes, and the cord could not escape severe compression. I have lost one or two children in much less time, where much less force was required, and though bestowing much pains on the funis, trying to relieve it from compression. The extractive force was also very great; for the limbs cracked as they were brought down, as did also the inferior maxilla as I endeavoured by means of the finger in the mouth to get the head cleared of the tightly-engirding os. The immunity of the child, under these circumstances, impels me to a reiteration of a statement I ventured to make in this place on a former occasion, viz., that it is truly surprising what an amount of traction the little ones will bear with impunity,—not only escaping with life, but even often apparently without lesion. At the same time, there must be a limit to their power of endurance, beyond which danger is inevitable, and within which it will be a pleasant thing for us if we can remain.

Lastly, a word in reference to the cord. Pulsation in it had ceased for a minute or two, but the circulation must have being going on. The fœtal heart had been acting, although there was no indication of this in the funis. Absence of pulsation in the cord, therefore, does not necessarily indicate death, which can only be declared to have taken place when respiration and cardiac pulsation have both ceased. The heart may be acting although there be no manifestation of this in the funis; but when this state of matters exists, it must forbode the speedy extinction of life.

ARTICLE VII.—*Case of Inflammation of the Anterior Columns of the Spinal Cord. Recovery.* By WM. CROCKATT, M.D., F.R.C.S.E., Consulting Surgeon to the Dundee Royal Infirmary.

(*Read before the Dundee Medical Society.*)

I HAVE been requested by the members of the Dundee Medical Society to allow the following case to be published, on account of its possessing some interesting features, both as regards the disease itself and the remedies used.

31*st July* 1866.—J. K., æt. 28, is of a strumous habit of body. Has been accustomed to live well, and consume a considerable quantity of malt liquor daily. About three months ago, one day, after reclining on damp grass, he felt unwell with a stiffness over the back, which gradually developed itself into a deep-seated pain at the lower part of the spine, accompanied with darting pains across the loins on both sides. Shortly afterwards, the lower extremities became shaky when standing or walking, but more especially when standing, with shooting pains down both limbs. Micturition became more frequent than usual, especially during the night, the urine being of a dark brown colour, depositing a large white sediment on cooling. Two months ago, the pains across the loins, but especially the shooting pains down the limbs, became very much aggravated, and mostly so at night, preventing sleep. About that time the left upper extremity became stiff, and he was quite unable to raise it. One month ago, or two months since the commencement, the right upper extremity became similarly affected, accompanied with darting pains between both shoulders and down both extremities; he felt no seated pain about the upper part of spine.

Present condition.—He has lost flesh considerably since commencement of attack, this being especially marked in the extremities. He sleeps badly at night, micturition being very troublesome; urine dark-coloured, alkaline, fœtid, depositing large quantities of phosphates. Appetite very much impaired; deglutition easy; respiration normal; circulatory system normal; pulse, 76. Intellect clear. He has no headache; but when standing erect, with his eyes closed, feels as if he would fall, and oscillates from side to side. Bowels generally constipated. He is unable to extend either of the upper extremities, which dangle helplessly by his side. He can move the fingers slightly, and grasp feebly anything put into his hands, but with no more strength than a child; sensation in both normal. Motion in both lower extremities considerably impaired. On attempting to walk he is almost unable to drag the one foot after the other, and succeeds only after considerable effort, made by twisting the trunk. On trying to ascend a stair, if one foot be placed on the step he is perfectly unable to place the other one alongside of it. When lying on his back he can flex and extend the lower extremities very partially, and that only after considerable effort. Can sit, or rather drop down into a chair, but is unable to rise, except with help. The pain complained of at the lower part of spine is situated between the last lumbar and first sacral vertebræ, about the area of a shilling, and is very much increased by pressure. There is no seated pain in any other part of spine elicited either by pressure or percussion, although a dull pain is experienced along the whole spine, and more especially at the upper portion of the dorsal vertebræ. He is very much annoyed with darting pains across the shoulders, and from the pained spot below across the loins, especially during the night, which prevents sleep. The shooting pains, down both upper and lower extremities, dart along the course of the larger nerves, and are worst during night. Sensation in lower, as in upper extremities, is natural. Ordered to take half-ounce doses of castor-oil occasionally, and to take half-drachm doses of the liquor secalis cornuti every four hours, and to apply blisters over the spine, extending in length from the nucha to the sacrum, and two inches in breadth.

4th September.—The blisters have been applied regularly (on an average once a week), also the liq. secalis cornuti has been taken as ordered. At present, being about one month since I first saw him, and four months since first attacked, his condition is as follows:—Motion in both upper extremities slightly improved; he is able to raise the arm almost to the horizontal posture, but only for a moment; with the right hand he can grasp a little firmer; the left much as before. Pain along the spine and across shoulders much diminished, also pain at lower part of spine,—the latter being still, however, painful on pressure; but the shooting pains across loins and down the extremities are not so severe. He is able to walk about the house, but still unable to ascend or descend a stair. When sitting on a chair is able to rise with little or no help. Sleeps still very badly at night, never more than an hour at a time, and generally after 3 A.M. Micturates more regularly in general during the day, but some nights as often as before. Urine more normal in colour and in quantity; phosphates occasionally. Appetite improved.

26th October (being nearly six months since first seized, and three since first seen).—Motion in the upper extremities very much improved. He is now able to take his food, and can lift both hands to his head. For the last fortnight he has been out almost every day in the open air, and is now able to take long walks, and also to ascend and descend stairs without help. Pains across shoulders and loins, and shooting pains down the upper and lower extremities, also pain at lower part of the spine, completely gone. He sleeps well, and never has to rise during the night to micturate. Appetite very much improved; he has gained flesh considerably, and bears fatigue well. Urine normal in colour and quantity; no deposit. Bowels regular. He has left off blistering and taking the liq. secalis cornuti, and now takes a mixture of quinine and iron.

In connexion with this case there are two conditions of things noticeable:—*first*, The paralysis of motion of the upper and lower extremities, while sensation was normal; *secondly*, That while the muscles proper to the extremities were paralysed and emaciated, those coming from the trunk to the extremities were well developed and normal in motion, as likewise were those of respiration.

ARTICLE VIII.—*Removal of Large Cancerous Sub-lingual Tumour, along with part of Lower Jaw.* By DAVID JOHNSTON, M.A., M.D., Surgeon to the Royal Infirmary, Montrose.

(*Read before the Meeting of the Forfarshire Medical Association, held at Brechin, 11th July* 1867.)

ON the 25th April 1867, John Simpson,[1] aged 56, was admitted into the Infirmary. The history he gave of himself was, that for the greater part of his life he had been employed as a baker, but occasionally for the last few years had been engaged as a labourer among the shipping at the harbour. He stated that he had always enjoyed good health until ten months ago, when he spent, one day, some hours in the hold of a vessel laden with lime, without the protection of a mask of gauze over the mouth and nostrils, which is usually worn by those engaged in such an occupation. The following day he felt his mouth and tongue sore, and in the course of a week was sensible of the presence of a small circumscribed swelling under his tongue. This tumour was punctured by a medical man after it had been present for two months, and discharged a small quantity of fluid. It, however, soon filled again, and gradually increased in size; the gum became tumid and spongy, bleeding slightly when touched; and the whole of the front teeth by degrees became loose.

On admission, a tumour, the bulk of a moderately-sized orange, solid, and granular on the surface, occupied the space between the frænum linguæ and the symphysis of the lower jaw. The tongue was pressed up and backwards into the roof of the mouth, and articulation was very indistinct. The incisors and canine teeth were loose; and the gum, to the extent of two and a half inches, was spongy, and bled slightly when handled. To this portion of the jaw the tumour was immovably attached, but it was not adherent to the under surface of the tongue, and in other directions could be moved with freedom. The amount of pain, either in the jaw or tumour, was very inconsiderable. The face was pale and thin, but on the whole the health was tolerably good. Neither the tongue, nor any of the glands or tissues in the neighbourhood, beyond what has been alluded to, showed any appearance of contamination. The patient entertained no doubt that the

[1] The subject of operation was shown to the members of the Association.

tumour commenced to grow first, and existed for at least three months before the jaw became affected.

The evidently malignant character of the disease, the freedom of the adjacent tissues from morbid action, and the unusually terrible nature of the death caused by such affections in the mouth or its neighbourhood, when not interfered with, at once shewed the necessity for removal of the whole of the parts involved.

This was effected on the 29th of April, with the assistance of my friends Drs Lawrence and Watson, in the following manner :—

The patient having been placed fully under the influence of chloroform, a strong ligature was carried through the tongue, near its apex, from side to side, by means of a needle, so as to afford complete control over this organ. After extracting the first molar tooth on each side, an incision was carried, in the mesial line, through the free edge of the lip down to the lower border of the jaw. From this point two lateral incisions were carried along the base of the jaw, rather beyond the sockets of the teeth extracted. The flaps were raised from the bone and turned backwards, and after freeing the soft parts from their attachments by passing a bistoury behind the bone from below upwards, the jaw was divided by a metacarpal saw through the sockets of the extracted teeth, which happened to be the posterior one on each side. The tumour, with the isolated part of the jaw-bone adherent, was now dissected from its attachments and removed. Seven vessels of considerable size required ligatures, and in anticipation of hæmorrhage turning out to be profuse and troublesome, each vessel was tied as it was divided, and the ligature cut short. The incision through the centre of the lip was united by two hare-lip pins, and the edges of the two transverse wounds were brought together by silver wire sutures. The chasm was stuffed with dry lint; and a folded handkerchief placed under the chin and over the head, to give support to the parts wounded, and to the portions of the jaw left. The full effect of chloroform was secured; but frequently asphyxia was imminent; sometimes when the tongue was allowed to fall too far back, and sometimes when it was pulled too far forward.

The hæmorrhage was comparatively trifling, and the vessels were secured with great facility.

The disfigurement immediately after the operation was much less than might have been expected after such an amount of mutilation; but the functions of articulation and deglutition were entirely abolished. A slight oozing of blood continued for a few hours after the patient was put to bed, but not to such an extent as to require interference.

No food was given until the following day; and, to secure rest, twenty-five minims of the solution of morphia were administered hypodermically in the evening.

During the three first days after the performance of the operation, the patient was able to swallow small quantities of liquid nourishment—such as milk, strong beef-tea, and wine. His tongue, however, was powerless to throw the food back into the pharynx, and it was necessary, by means of a small funnel and elastic tube, to pass this kind of nourishment over the root of the tongue, when he managed with great difficulty to get down small quantities of what was given to him. Up to this time the pulse was never above 96. On 3d May, the fourth day after operation, the lips and tongue were much tumified; swallowing was nearly an impossibility, and the pulse had risen to 130. Considering that this rise of pulse and other unfavourable symptoms were in a great measure due to inanition, caused by the want of a sufficient amount of food, a better supply was introduced into the stomach by means of the pump, and twenty-five minims of solution of morphia injected into the arm in the evening by means of Wood's syringe. Next day, improvement was very manifest, and after this date the progress towards recovery was uninterrupted. He could again swallow a small amount of liquid, introduced in the manner described already, but got also every day, until 11th May, a full meal, consisting of two raw eggs and two glasses of port wine, in a basin of strong beef soup, by means of the stomach-pump.

The whole of the external incisions united by the first intention; distinct articulation began to return on 7th May; and on the 12th he could walk through the ward. On the 25th, a very thin exfoliation was removed from each cut extremity of the maxilla. The lint was removed from under the tongue on 1st May, and was not again introduced. The mouth was freely and frequently washed out with diluted Condy's fluid by means of a syringe, until fœtor entirely ceased; then the ordinary zinc lotion was substituted.

On 9th June, the whole extent of wound inside the mouth was healed, deglutition was perfect, the function of articulation was much better performed than it had been previous to the operation, and on this day the patient was discharged.

The portion of the jaw removed measured four and a half inches in its greatest length, and two and three-quarters of an inch from one cut extremity to the other. When the patient was dismissed, the distance between the two extremities of the remaining portion of the jaw was only one inch and a half; so that they were thus found to have approximated during the process of cicatrization one inch and a quarter.

The bone, where it was adherent to the tumour, was soft, friable, and broke down easily under the finger. This softening only occupied half the depth of the maxilla. The tumour, when cut into and examined, presented all the characteristics of medullary cancer; and an examination of it, made microscopically by Dr Watson, was confirmatory of this being the nature of the disease.

Although tumours, and malignant affections of both the upper and lower jaw, as well as the tongue, are far from uncommon, the particular disease just described does not seem to be of very frequent occurrence. On looking through any surgical works or periodicals within reach, I have been able only to find recorded one analogous case, which was admitted into Gray's Hospital, Elgin, under the late Dr Paul, and successfully operated upon by him. An excellent account of this case was given by Dr Paul in the number of this Journal for September 1858. He also removed the tumour, with part of the jaw attached, and the plan adopted by him was almost exactly the same as that which was had recourse to in the case just narrated. Indeed, the two cases are so thoroughly parallel, that one description might suffice for both.

The ultimate issue of Dr Paul's case I am ignorant of; and the tendency to reproduction of such disease is so great, that a long period of immunity may not be enjoyed by the subject of this proceeding; still the restoration of health and comfort, even for a time, justifies the performance of such an operation in circumstances like those described, and in many others of an allied nature.

When the tumour and portion of jaw-bone were removed, the freedom with which manipulations of every kind could be carried on within the mouth was wonderful, and show that in operations within this cavity, the simple division of the symphysis, which allows of the separation of the two extremities of the severed jaw-bone to the extent of two or three inches, gives the operator an advantage which he cannot command by any other procedure.

Excisions of the Tongue and Superior Maxilla for Epithelial Cancer. Present state. By GEORGE BUCHANAN, A.M., M.D., Glasgow. A Letter to the Editor.

Glasgow, October 1867.

SIR,—As I believe the most important point in connexion with operations for cancer is the future progress of the patients, I desire to take this opportunity of informing your readers, who may be interested in the subject, as to the present state of three cases formerly reported in this Journal.

1*st*, Excision of one lateral half of the tongue by Prof. Syme's method—Mrs M.; reported in Edinburgh Medical Journal for November 1865. Patient at present perfectly free from disease.

2*d*, The same operation, December 1866—Mr B.; reported in Edinburgh Medical Journal for February 1867. No trace of return; patient continues well.

3*d*, Excision of superior maxilla for a large tumour—epithelial cancer springing from alveolus—operation May 1863; reported May 1864. Present state: perfectly free from all signs of disease. Patient can swallow and articulate easily.

The above facts corroborate the opinion that epithelial cancer, even when it attacks such deeply-connected organs as the tongue and upper jaw, may be eradicated, if care be taken that the incisions are made in the sound tissue beyond the limits of the disease. —I am, yours truly, GEORGE BUCHANAN.

Part Second.

REVIEWS.

Intestinal Obstruction. By WILLIAM BRINTON, M.D., F.R.S. Edited by THOMAS BUZZARD, M.D. London: Churchill and Sons: 1867. Pp. 136.

THIS work is a reproduction, with additions and improvements, but without essential alteration, of the Croonian Lectures delivered by the author in 1859, and published in the *Lancet* at the time. The subject was a favourite one with Dr Brinton: from the commencement nearly of his medical studies, his attention had been directed to it; and the conclusions he has arrived at were the result of the researches, observation, and experience of a series of years. A peculiar interest attaches to the present volume from the circumstance that it is the author's last contribution to medical science: he was engaged in passing it through the press at the time of his death. Dr Buzzard has completed the publication, and has added the notes of three illustrative cases as an appendix. Our readers are well aware of the valuable additions to various departments of physiology and medicine which we owe to Dr Brinton; the regret at the loss which his death has occasioned to science is still recent. This monograph on intestinal obstruction justifies that regret, and is worthy of his reputation. It contains an excellent, and in many respects an original account of the pathology and treatment of a most important disease; it is the production of an original observer, as well as an accomplished physician; and it deserves attentive study as a valuable guide in a class of cases often obscure and embarrassing, always dangerous to the patient, and a source of painful anxiety to the practitioner.

Small as the volume is, the materials for remark and comment are abundant. We shall limit ourselves, however, to an indication of some of the principal features.

Intestinal obstruction is not a common nor a very rare disease. Every practitioner may expect to meet with it occasionally. Out of upwards of 2000 post-mortem inspections of all diseases, Mr Phillips, in his excellent paper (Med. Chir. Trans., 1848), estimated the proportion of deaths from intestinal obstruction at 1 per cent. Dr Brinton, from the much larger collection of 12,000 autopsies, reduces the proportion to 1 in 280. These numbers are of course approximative only, but they give some idea of the frequency of fatal cases.

Dr Brinton has retained his original division into three lectures or chapters, of which the first contains the pathology of obstruction in general, the second gives the differential diagnosis of the various kinds of obstruction, and the last discusses the treatment.

It is proper to observe at the outset that Dr Brinton has confined his remarks almost exclusively to mechanical or organic obstructions of the intestines, where the obstacle persists and is discoverable after death. These constitute, no doubt, the most serious and important cases. At the same time, it must be kept in mind that so-called functional obstructions occur, *i. e.*, where no mechanical impediment can be detected, and where, nevertheless, the symptoms bear a most treacherous resemblance to those produced by intussusception, stricture, and similar lesions. The functional obstructions were formerly ascribed to spasm; more recently, after Abercrombie and other writers, they have been referred to paralysis of a portion of intestine. Dr Brinton more than once refers to this functional stoppage; but we wish that he had given it greater prominence, and that he had made it the subject of special observation in his descriptions, in the same way as he has done in regard to the different varieties of the mechanical obstruction.

Dr Brinton's peculiar and original views on the mode of production of fæcal vomiting, find, of course, an appropriate exposition in discussing the pathology of obstruction. This symptom used commonly to be ascribed to an antiperistaltic action of the intestines. Some of Dr Brinton's earliest researches were directed to prove that this explanation was untenable; in short, that antiperistalsis has no real existence, either in health or disease. He has certainly shown clearly that a continuance of ordinary peristaltic movement in an obstructed tube would effect a certain amount of reflux of its contents.—"A peristalsis," he says, "engaging the wall of a closed tube, filled with liquid, and falling short of obliterating its calibre, sets up two currents in that liquid: one at the surface or periphery of the tube, having the direction of the peristalsis itself, and one in its centre or axis, having precisely the reverse course. Those particles of the liquid which are in contact with the inner surface of the tube are propelled onwards by the muscular contraction of its wall. And this propulsion is necessarily accompanied by a backward current in those particles which occupy the axis or centre of the canal." The practical effect of this axial reverse current is to mix the contents of the bowel next above the obstruction with those higher up. The arguments and experiments adduced in refutation of antiperistalsis are certainly very ingenious, and display much ability: they almost amount to a demonstration. They are prevented from being perfectly conclusive, we think, by a few facts, which perhaps may be ultimately found inaccurate, or be otherwise explained, but which still hold their place. One of these facts is the rapidity with which fæcal vomiting occasionally comes on in cases of obstruction. A few hours sometimes suffice to produce this formidable symptom. We doubt if anything less than inverted action (antiperistalsis) could account for this. Again, there is the occurrence of intussusceptio ascendens, in which a piece of intestine is invaginated into the portion above it, and which could apparently be occasioned by antiperistalsis only. No doubt, the descending invagination is the usual, almost the invariable, form of the displacement; the ascending variety is so rare as to be almost doubtful; and Dr Brinton was sceptical of its existence. Yet it is not possible at present to reject what able pathologists have described. We call attention to the point in order that, as Dr Brinton indeed desired, further investigations by careful detailed dissections of alleged examples may decide the fact. On the other hand, we do not attach any importance to the cases in which it is reported that materials administered by injection passed upwards and were vomited, because these accounts are not properly authenticated, and are generally discredited.

Among the diagnostic features, we find that Dr Brinton attaches great importance to the abnormal distention or tumour of the intestine, which, he asserts, may be detected by percussion and palpation with much greater certainty and at an earlier period than is generally believed. "Experience entitles me to assert," he says, "that the accumulation of intestinal contents immediately above the obstructed point may sometimes be detected, as a slight fulness to palpation, and a much more definite dulness to percussion, where many of the other indications of obstruction are scarcely perceptible, or even absent." And this symptom, which possesses the certainty of a physical sign, may serve to indicate the position as well as the existence of obstruction.

Dr Brinton makes the appropriate division of the progress of intestinal obstruction into two stages: the first consisting of the pain, distention, vomiting, and "writhing peristalsis;" and the second characterized by the supervention of inflammation and paralysis of the obstructed bowel, ending finally in general systemic collapse. Without following his graphic description, we may notice one or two important remarks. Speaking of the great significance of distention, he observes:—"Excluding the rarer accidents of the obstructed state, the rapidity of death depends greatly on the degree and rapidity of that distention which the obstruction brings about: in other words, the fatal event is, in general, hastened or deferred, according as inflammation, secretion, and ingestion, together fill (quickly or slowly, completely or incompletely) the segment of intestine above the obstructed point." Experiments on animals confirm the truth of this rule. In regard to pain, we find it noted, among other characters, that "it is usually intense in intussusception, and in the impaction of gall-stones; somewhat less marked in the obstruction produced by twisting of the bowel, or by bands and adhesions; scanty in the obstruction of stricture; and almost absent in the obstruction caused by the impaction of fæces in the large intestine." These distinctions are important, but we doubt their being so decided as to afford sure grounds for discrimination; the obstruction from bands or adhesions, for example, is often attended by sudden and intense pain. We observe, in passing, that Dr Brinton ascribes the intestinal pain to distention of the blood-vessels. We have no intention to criticise this theory, which is only indicated by the way. The pain of distention, like that of sprains, is an obscure subject; but we confess we do not understand pain as "mediated" by blood-vessels, unless nerves take part in the process.

Section or Chapter II., which treats of the differential diagnosis of the various kinds of intestinal obstruction, produced by diverse pathological lesions, is the most complete, and, practically, the most valuable and important in the book. The prognosis, the kind of treatment, and the results to be expected from it, all depend chiefly upon the degree of certainty with which we can distinguish accurately, during life, the particular cause to which the obstruction is due. This discrimination has generally been regarded as exceedingly difficult, and often impossible. From his careful study of the subject, Mr Phillips concluded that "the diagnosis of the nature and the seat of the obstruction is, in most cases, most uncertain and unsatisfactory." Dr Brinton, on the other hand, expresses confidence in the possibility of establishing an accurate diagnosis, maintaining that "even in the earliest stages of an intestinal obstruction we may, in most instances, recognise both its situation and the group of obstructions to which it belongs" (p. 87). For the particulars on which the diagnosis is founded, we must, of course, refer to the author's descriptions, which deserve careful study. We are not so sanguine as the author was, that the difficulties of the diagnosis have been overcome. Even cases of functional obstruction, which he does not apparently think it necessary to discriminate, have often been mistaken for instances of permanent organic obstructions. And, in actual practice, when we attempt to distinguish the various kinds of obstructive lesions with sufficient certainty to decide the question of operation, for example, the difficulties, in spite of our increased pathological knowledge, are still very serious. But we gladly admit that the rules and considerations laid down by Dr Brinton have given greater precision to the diagnosis than previously existed, and have indicated the direction in which further accuracy and certainty may be attained by a combination of clinical and pathological observation. The chapter is a particularly valuable one, as exhibiting the fruits of much research, reflection, and experience.

Among other interesting facts, the following statistics afford an example of the assistance which diagnosis may derive from that source. In about 600 autopsies of obstruction the proportions found were: intussusceptions, 43 per cent. (pretty nearly one-half); obstructions by bands, adhesions, diverticula or peritonæal lesions, 31 per cent.; strictures, including a few tumours of the intestinal wall, 17 per cent.; torsion of the bowel on its axis, 8 per cent. The varieties of intussusception were, per cent., ileo-cæcal, 56 (more than half); iliac, 4; jejunal, 4; colic, 12. Of the lesions other than intussusception, strictures and torsion belong almost entirely to the large intestine (88 per cent.); while adhesions and peritonæal lesions causing strangulation, and gall-stones, are found almost exclusively in the small intestine (95 per cent.)

The remarkable frequency of intussusception at the lower end of the ileum and the adjoining cæcum is an important fact, the practical significance of which is obvious. The explanation of this excessive liability might be expected to throw light on the mode of production of invagination in general. We find Dr Brinton ascribes the frequency to three circumstances: "an irregular activity of the ileum, a resistance by the ileo-colic valve, and a laxity, probably congenital, of the cæcum. The first tends to invaginate the end of the ileum; the second prevents the bowel from being forced through the valve; the third permits the pliable cæcum to form the middle and outer sheaths." But this is rather a statement than an explanation. Indeed, the mode of production of invagination has not been very clearly ascertained, or at least has not been very definitely described by authors. Beyond the general statement that excessive action of one portion and paralysis of another are the chief causes, no explanation is usually given of the process. Dr Brinton's account, which differs somewhat from the usual one, is as follows:—"The immediate cause of the displacement must be sought, not only in an abnormal violence, extent, and abruptness of that contraction of the transverse muscular layer, which is one element of peristaltic movement, but in a deficiency of that co-ordinate contraction of the longitudinal fibres, which is an equally important (though less energetic) constituent of healthy peristalsis. The sudden and forcible constriction of a considerable length of bowel—fixed, as it were, behind, by the hitherto unrelaxed contraction from which it has extended, and bounded in front by a relaxed and flaccid bowel (unstretched by the due contraction of its longitudinal fibres)—must, as it suddenly diminishes the width of the segment it involves, simultaneously increase its length, and thus push a variable portion of it into the succeeding dilated segment. This explanation, which seems to be a simple and incontrovertible application of the laws of intestinal movement to the facts of intussusception, refers the lesion to two causes—an active and a passive; one which thrusts the bowel forwards into the next segment, and one which permits this segment to receive it." There is an assumption here, not easy of admission, that the longitudinal fibres cease to contract co-ordinately with the circular ones. And withal the mechanism of invagination does not seem very obvious, nor are the causes of the increased action or paralysis sufficiently inquired into. The pathogenesis of intussusception still requires elucidation.

We have little space left to notice Lecture III., which comprises the author's appreciation of the methods of cure in accordance with the pathological distinctions laid down in the previous lecture. The surgical or operative treatment is first discussed. Gastrotomy is recommended, with certain reservations, in obstruction caused by internal strangulation and torsion; and is rejected in intussusception, gall-stones, etc. Amussat's operation is advised in strictures, since these are usually placed in the colon or rectum. The principles which should guide the medical treatment are next very lucidly explained and enforced. The older methods of treatment by antiphlogistics or mercury, and especially by powerful purgatives, which were attended by very fatal results, are condemned; the judicious employment of opium, laxatives, enemata, etc., is shown to be as successful in practice as it is rational in theory. We believe the latter mild and safer plan is now more generally followed than when these Croonian lectures were delivered; a result to which Dr Brinton largely contributed. Again recommending the work as a real addition to Clinical and Practical Medidine, we give, in conclusion, the author's summary of treatment:—

"In intussusception of the large intestine, repeated injections of liquid into the rectum, so as to distend the bowel to its utmost dimensions.

"In stricture of the large intestine, the institution of an artificial anus above the obstacle.

"In obstruction from bands, diverticula, etc., mostly affecting the small intestine, gastrotomy, and division of the cord-like cause of strangulation; a procedure which, if interrupted by unforeseen impediments, may further require the institution of an artificial anus in the most distended part.

"In obstruction by stricture, however, a tobacco enema should be administered at least once; a measure which should be repeated, if need be, in obstruction by bands, and especially by gall-stones.

"In all cases, opium and support to be freely administered from the earliest stage of the malady. The bulkier liquid constituent of the food to be given as sparingly as possible by the mouth, but administered freely per anum. Distensive enemata to precede all operations, if only as a means of aiding or assuring diagnosis. Where vomiting is excessive, nourishment to be also injected into the rectum in small and frequent doses.

"After recovery, all food which can introduce indigestible substances into the intestine should be carefully avoided; the bowel having sometimes undergone changes of calibre and arrangement, such as permit substances easily transmissible through the healthy canal to cause fatal obstruction."

De la Folie Raisonnante, et de l'Importance du Délire des Actes pour le Diagnostic et la Médicine Légale. Par A. BRIERRE DE BOISMONT.

Moral Insanity and the Importance of Insanity of the Actions for Diagnosis and Legal Medicine. By A. BRIERRE DE BOISMONT.

LIKE most continental authorities who have recently taken up the subject of Moral Insanity, M. Brierre de Boismont has abandoned the original doctrine of Pinel, Esquirol, and Prichard—that it ever exists without any derangement of the understanding whatever. He does not insist, by any means, that in all cases there will be found delusions, hallucinations, or illusions, but that nevertheless the intellect is to a certain extent, and in a certain manner, deranged. No doubt can of course be thrown upon the authenticity of the cases on which the doctrine of moral insanity without intellectual disturbance was founded; but it is held that these cases were misconceived, and the attention of the writers being completely absorbed by the immense preponderance of the moral disturbance, the intellect was erroneously concluded to be sound because it presented no glaring defect.

One consequence of this change in opinion is, that the term Moral Insanity or Folie raisonnante is now applied to a host of cases, many of which bear little or no resemblance to the Moral Insanity of Prichard, Folie raisonnante, or the Manie sans délire of Pinel, these being hitherto recognised as different names for the same form of insanity. Once admitted that intellectual disturbance in some form is always present in even the purest cases of moral insanity, restrictions give way one after another; and we now find that the existence of extravagant delusions is no impediment to a case being regarded as one of moral insanity; and there are many cases in this memoir which are not really examples of moral insanity (folie raisonnante) as hitherto understood. Moral insanity, or folie raisonnante, which is the name M. Brierre de Boismont prefers, is not, according to him, a distinct form of insanity at all, but only a *symptom* of many forms of mental alienation, which may appear at the beginning, middle, or end of almost any type of insanity. To be morally insane, according to M. Brierre de Boismont, is "to talk the language of reason in madness;" and this symptom, as he justly calls it, is manifested in many very different forms of insanity. It is frequently observed, for example, in the initiatory or prodromic stage of general paralysis, when the patient is in a state of maniacal "exaltation," and before the indubitable symptoms of the disease have declared themselves—in the lesser degrees of mania, in ordinary mania, without even the occurrence of a lucid interval. Hypochondriasis and melancholia may at their commencement, or in their most advanced stage, present it; and when it is associated with hysterical or erotic mania, it produces a combination which is a pest in all asylums, and a source of disgrace and misery at home.

This pamphlet seems to have been provoked by a protracted and animated discussion, in which the Medico-Psychological Society of France have lately engaged, on the subject of folie raisonnante and its legal relations; and the object of the author is to point out that, while in all cases there is really disturbance of the intelligence, its great and distinguishing feature is the insanity of the patient's acts (délire des actes), and the abnormal perverted tendency of his instincts, contrasting with his reasonable conversation and writings. M. de Boismont points out how important it is never to lose sight of the analogy subsisting between this mental condition and that which characterizes a great many of mankind, who, while they astonish the world by their wit and reason, yet risk their fortune, life, and honour in the most thoughtless and dishonourable enterprises, bringing to recollection the saying regarding Madame du Deffand: "She was ever fated to be wise in judgment and foolish in her conduct," like King Charles, "who never said a foolish thing, and never did a wise one.

The memoir contains twenty-five admirably reported cases in which this symptom of folie raisonnante was manifested; and such a collection as this, by an observer of M. de Boismont's discrimination and experience, is of itself of great value, apart altogether from the able commentary which accompanies it.

The forms of insanity in which this symptom occurred are summed up thus by the author:—

Mania, ...	4
Hypochondriacal insanity, . . .	2
Melancholia (simple or double), . .	8
" with suicidal or homicidal tendency,	2
Intellectual monomania, . . .	3
Impulsive hysterical monomania, . .	3
Partial imbecility (double form), . .	1
General paralysis, ...	1
Epileptic insanity, ...	1
	25

In almost all these cases the folie raisonnante was associated with delusions, illusions, or hallucinations. In three, however, there were no such symptoms, and these were accordingly the most difficult to establish, in a legal point of view, and their diagnosis rested entirely on the "délire des actes," the perverted instincts, the absence of the moral perceptions, and the abnormal state of the intelligence as shown by the patient's acts. We can only afford to quote one of these most interesting cases. It is termed a case of impulsive monomania.

"M^me^. Marie, æt. 30: sanguine lymphatic temperament; well formed. Her mother was insane, one of her brothers is an imbecile, and her father died of a paralytic affection. Very early in life this young lady manifested strong uterine tendencies. Married young to counterbalance the force of this instinct, she delivered herself up to every excess, and gave birth successively to three illegitimate children, whose fathers she could not even name. A legal separation was the result of this vicious life. Regardless of her own interests, without method, liberal with money to satisfy her passions, she would have been immediately ruined had she not been provided with a judicial factor. Her conversations, her conduct, her alternations of rage and of calmness, even sweetness, raised doubt regarding her sanity. A serious disease, the result of her excesses, obliged her to enter an hospital regulated by law, where she was unable to remain on account of the derangement of her faculties." She was sent to an asylum. "During the first days of her admission this lady conducted herself with propriety, and showed herself, above all, well satisfied with the change. But soon the disorder of her mind was evident.

"She held the most obscene conversations, spoke of her delinquencies in the most disgusting terms, and said openly that a woman should take the first who came, and even that she would request a certificate of prostitution.

"The scene soon changed. She apologized for her conversation, attributed it to her illness, and testified a lively repentance for her conduct. If she were indisposed, she pretended that some one had made indecent proposals to her, and accused even old men of provocations; crying that the attendants ought to exercise the greatest supervision, and that it was not her fault if her illness overpowered her.

"This fickleness showed itself every instant. Sometimes she accused us of detaining her illegally; at others she implored us to keep her. She was an object of continual watching, in order to prevent her committing improper acts. Our uneasiness became a source of amusement to this lady. She provoked it on purpose, and then burst into laughter. When her excitement had passed off, she lived on a peaceable enough footing with us; but whatever wounded her pride, her vanity, or her pretensions, irritated her to the last degree, and there are no insulting words of which she would not make use. The only plan was then to seclude her in her chamber. By flattery one managed her easily enough, but the slightest reproof rendered her furious and insolent. There were times when in the morning she delivered herself up to her intemperance of language and conduct, while in the evening she entreated one to pardon her the scenes of the morning, alleging frequently that her insanity was the cause of what took place, that she had the same madness as her mother, and would end in the same way. At times she said, 'I am really ill, for my face is changing.' In observing her, one perceived indeed a remarkable alteration in her features, and on one occasion she was some moments without being able to speak.

"Such a character as this would inevitably complain of her sequestration. Cunning, knowing how to dissemble, she might cause us embarrassment. We requested one of the inspectors-general to examine her. She commenced by telling him that she had been placed in the asylum without a certificate; and when it was produced, she maintained that for money doctors would sign anything at any time. In the two examinations which he made of her, he was unable to obtain any confession of her acts or conversations; and although he was strongly inclined to believe her insane, he advised us to allow her to appeal to the courts of justice, await the consequences of her petition, and act according to their decision. We repeated the words of the inspector to the lady, assuring her that we would transmit her petition to the authorities. She paid no attention to our communication. Not wishing to have anything unpleasant in our relationship with her, we advised her, whenever she might wish, to apply to her judicial factor, who was well versed in the law She saw him, but did not demand of him her liberty.

"Knowing that this lady, in her interviews with the inspector who examined her, had taken great care to say only what she chose, I called to her mind her daily conversations, her acts outside and in the asylum, her variations from evening to morning, her furies and her repentances. 'That is all very well here, or when I am free,' replied she, laughing; 'but those who come to investigate my case shan't pump me. I will confess nothing. I will deny everything I have done. I will maintain the children I have are by my husband. I lie to excuse myself, and will always do the same thing.' 'In thus revealing to us your plan,' I suggested, 'you are surely insane; for unless it were so, you would conceal your schemes and hold your tongue.' 'What does it matter, since I will always maintain that I have said nothing to you? Besides, there are no proofs.'

"Mme. Marie has days when she appreciates what is right and what is wrong, confesses her faults, and attributes them to her disease. Set at liberty, she would throw herself into the vilest excesses, and dissipate her substance in no time."

This is precisely one of those cases which, appearing doubtful to the multitude, give rise to clamours about mad doctors, illegal detentions, etc., and the correct diagnosis of which brings down vulgar derision upon scientific men. It is also one of those in which many alienists would maintain there was no derangement of the intellect. The last point would, after all, resolve itself very much into a battle of words; but, in regard to the former, no educated medical person with sufficient discrimination to dissever the question of insanity from that of total irresponsibility could for a moment have any doubt. In the words of M. B. de Boismont: "It is at once a humane and reasonable thing to maintain, in a decent place, under the protection of the law, a person who, evidently insane to us and the servants in the asylum, and to the other patients themselves—better judges in this case than those outside—would ere long be shut up in prison as a responsible offender."

We shall conclude our notice of this excellent memoir by giving the conclusions at which the author arrives after a careful investigation of the twenty-five cases reported.

1*st*, There exists a variety of mental alienation in which the patients express themselves with every appearance of sanity, and to which the name of Moral Insanity has been applied (*folie raisonnante*): acquaintance with this form is the better arrived at the more deeply one studies the sane man, from whom the lunatic is a deviation.

2*d*, This variety of mental alienation may be undeniably proved in its various types, but more particularly in maniacal exaltation, melancholia, impulsive monomania, insanity of an alternate form, etc.

3*d*, This manifestation of insanity, which is in itself only a symptom, may at times become so predominant that the accessory seems the principal. A prolonged observation ends most usually by recognising in it several of the principal symptoms of insanity.

4*th*, Moral insanity (*la folie raisonnante*) has for distinctive characteristics insane acts (*le délire des actes*) and perverted instinctive tendencies contrasting with sensible words. Observation teaches that when the mind is no longer over-excited or on the alert, intellectual disorder may often appear in the conversation.

5*th*, The persistence of reasoning in the words of the insane—an almost indestructible attribute of this faculty—may show itself in the writings; but when one observes for a long time these patients, insane acts discover themselves through their writings also.

6*th*, A knowledge of moral insanity (*folie raisonnante*) is the more useful in a medico-legal point of view, because these lunatics are generally inclined to do harm. Calumnious and anonymous accusations, plots, falsehood in the writings, lies in every possible form, breaches of honour, suicide, homicide, accusations of corporal violence, theft, outrages against morality, lawsuits against arbitrary detention, demands for damages—are, indeed, the ordinary acts of the morally insane (*des fous raisonnants*).

7*th*, An important distinguishing characteristic separates individuals of sane mind from the morally insane: the first, when they are not criminals, generally repel bad impulses, or repent when they have been led astray by them; the second, not believing themselves ill, give themselves no concern about them, and scarcely ever see anything reprehensible in them.

8*th*, Another characteristic of no less value is the impossibility for such lunatics to arrive at anything stable throughout the duration of their mental disturbance (*rêve*).

9*th*, Lastly, when the moral madman dissimulates his insane ideas so as to raise doubts on the subject, and commits no hurtful action, the only thing to be done is to allow him to go free, warning him that he is the arbitrator of his own fate.

The Principles and Practice of Obstetric Medicine and Surgery. By F. H. Ramsbotham, M.D., etc., etc. Fifth Edition. London: Churchill and Sons: 1867.

There is, among British works like this, little difference as to their contents. They are—pregnancy and its diseases, natural and unnatural labour, the puerperal state and its diseases. Every one must recognise this as a natural collection of treatises suited to compose a volume, and we are astonished that the example is not universally followed. On the Continent we still have sometimes the addition to such midwifery works of a mass of medical jurisprudence, a collocation arising from the fact that, in several foreign universities, midwifery and medical jurisprudence are taught in the same course of lectures. But we more frequently have the injurious omission of the puerperal state and its diseases—an omission which, so far as we know, is not in any definite way made up for. In British works we find, as we have already said, a very natural and complete course of teaching. Still, in most, there are lesser omissions, as, for example, suckling, a subject we daresay authors leave over for writers on the dietetics and diseases of infancy.

Dr Ramsbotham's volume is a good example of the kind of book referred to. It could scarcely fail to be so. The son of a famous obstetrician, he was born in the branch of the profession to which he has devoted a long and useful life. These circumstances, and the additional one of this being a fifth edition, are sufficient testimonials to certain excellent qualities of the work. Everywhere you can see the man of learning and experience. We trust that both author and publisher will soon have the edition sold, because we are sure that every one who buys a copy will find in it his money's worth.

At the same time, we wish Dr R.'s health had been such as to enable him to bring the work some steps nearer to the unattainable perfection. A considerable number of new and important researches are not even referred to by him. We allude to scientific researches of a kind at once fundamental in importance, and everlasting in claim to a place in such a book. Many new plans of practice also, are passed over; and while we admit that such treatment is appropriate to most of these therapeutical proposals, it is certainly not appropriate to many. Whether to praise or to condemn it, Dr R. should, for example, have mentioned the cephalotribe. On such practical topics, above all, at the present moment, we desiderate the opinion of such veterans as the author now reviewed. Had there been such discussions, we would have had copious food for a critical pen. As it is, we can cull from the volume one or two bits of great interest.

Here, for instance, is our author's opinion of the value of chloroform in natural labour, after this agent has been twenty years in use:—

"Nevertheless," says he, "I have not seen the least reason to alter the opinion I at first entertained,—that before anæsthetics can be introduced for the relief of ordinary pains of childbirth, it must be proved incontestably that they are invariably safe, both to the mother and her infant.

"Since the above was written, eleven years ago, experience has fortunately proved that the gloomy anticipations which I had formed respecting the danger universally attending the administration of anæsthetics, have turned out to be, in some degree, fallacious, or, at least, it is not so great as I feared it would be; for the casualties that have resulted from their use during that period have been astonishingly few. And I am pleased to have the opportunity of confessing the value of this drug in those cases where, in the body of this work, I have advised its exhibition.

"I would still, however, adhere to my former opinion, that to place a patient under the full effects of this vapour, as was at first recommended by Sir J. Simpson, must be attended with no small amount of danger. Nor do I consider this in any case necessary, since, as I have said before, the acuteness of the suffering may be mitigated by bringing the system partially under its influence."

This opinion is, however, not given without a dreadful footnote, which has one of the characters often ascribed to the postscript of a lady's letter. After a hint or suggestion that a mixture of chloroform, ether, and spirit of wine [Ellis] may, perhaps, prove to be a perfect anæsthetic, without danger of any kind, Dr Ramsbotham portentously adds:—

"In the Registrar-General's Annual Reports for Scotland, 1861, beginning with the year 1855, he states that, in every 100,000 women, 18 die either in childbirth or of some uterine disease, and that childbirth is the chief cause of this mortality; while, in England, the average in the same number is 16; and that with puerperal fever [metria] the proportion is 34 in 100,000—nearly twice the proportion that obtains in England. This difference is not supposed to arise from any deficiency of, or distance from, medical aid; and he raises the question, whether anatomical conformation might be the cause. Is it not possible that it may depend on the almost universal employment of chloroform in labour throughout Scotland, which is rarely used in England?"

This passage excites some curious reflections, with some of which we may amuse our readers. Is proximity to medical aid desirable, considering the results? Is not remoteness the favourable condition for recovery?

What anatomical difference is there between a London and a Westminster woman, or between a woman of Cornwall and one of Cumberland, or between one of Yorkshire and one of the Lothians, or between an Aberdonian and an Oxonian? Is there any anatomical difference between a Saxon and a Celt, between a German and an Italian, between a Spaniard and a Turk? Is there any relatively important anatomical difference between an Esquimaux and a Hindoo, between a Fuegian and a Hottentot?

To what extent is chloroform used in England, and to what extent in Scotland? Is there any more used in Scotland than in England? In what poor community or poor agricultural district is it the rule to use it? Since its use has become more general in England, has the mortality of labour increased? Such questions we leave to Dr R. to answer, if he thinks it worth his while. If his footnote has any substance, he is still, and justly so, an unrelenting opponent of the use of chloroform in natural labour. What is the value of his footnote as it stands, we think our interrogatories are sufficient to indicate.

We take one other subject for a few remarks—an all-important one—the so-called puerperal fever. This disease, or class of diseases, Dr Ramsbotham introduces with the following admirable remarks:—

"In the whole range of Scientific Medicine there is no subject which is, in my opinion, so difficult to treat, as that of puerperal fever; and this not only on account of the contradictory opinions put forward by men of the first eminence in the profession regarding its nature and mode of treatment. Some have considered it a specific disease, belonging exclusively to the puerperal state; others have looked upon it as an ordinary complaint, modified only by the peculiar condition of the system under childbed. Some are strenuous in the opinion of its being highly inflammatory; others think it an asthenic fever. Some, again, suppose it in an eminent degree contagious; others, that it is incapable of being communicated by any means; but all agree—for on this point there cannot possibly exist two opinions—in its dangerous character, and in the little control that the boasted power of medicine possesses over it."

Dr R., we gather from his remarks, believes that four diseases are confused under the name of puerperal fever. These are, hysteritis, peritonitis, acute tympanites, and a fever allied to typhus; and if we go back to the time when Dr R. first wrote or entertained these views, we can have no hesitation in saying that he was then in a better line for progress than his contemporaries. But, although the great field is scarcely yet even roughly mapped out, pathology has now left such views as Ramsbotham's far behind. He did well in attempting to distinguish, in puerperal fever, four different diseases confounded together; and in this he had the advantage over some who, even now, persist in re-amalgamating them under one designation, new or old. To us it appears that the name must be given up when scientific precision is aimed at, although it may be retained as a convenient term under a variety of other circumstances. No one now, we daresay, will think it worth while to adopt or defend our author's view. Indeed, we may say as much for every British account of the disease of which we know. On the Continent, especially in Germany, the matter seems gradually to be setting into what will probably be its next form. It is very simple, and we might refer to many authors for various views of it. Purely inflammatory diseases are separated from those in which there is an affection of the blood, and in which there may be secondary inflammations. These two classes of diseases are partly or wholly included in old childbed fever. Now, the name, if used at all, tends to be more and more restricted to cases where injury of the blood is the chief point in the disease. This injury is either pyæmia or septicæmia. And here we find ourselves, as Ramsbotham says, in one of the most difficult subjects of Practical Medicine. But much increase of knowledge is expected to arise soon, for pathologists are striving to elucidate the matter, and the genius of Virchow is enlisted in the cause.

On the Diagnosis and Treatment of the Varieties of Dyspepsia, considered in relation to the Pathological Origin of the different Forms of Indigestion. By WILSON FOX, M.D. London, F.R.C.P., Professor of Pathological Anatomy at University College, London, and Physician to University College Hospital. London: Macmillan and Co.: 1867.

The Indigestions, or Diseases of the Digestive Organs Functionally Treated. By THOMAS KING CHAMBERS, Honorary Physician to H.R.H. the Prince of Wales, Consulting Physician and Lecturer on the Practice of Medicine at St Mary's Hospital, Consulting Physician to the Lock Hospital, Author of "Lectures, chiefly Clinical," etc. London: John Churchill and Sons: 1867.

A Treatise on the Function of Digestion, its Disorders, and their Treatment. By F. W. PAVY, M.D., F.R.S., F.R.C.P., Senior Assistant-Physician to, and Lecturer on Physiology, at Guy's Hospital. London: John Churchill and Sons: 1867.

On Diseases of the Stomach, the Varieties of Dyspepsia, their Diagnosis and Treatment. By S. O. HABERSHON, M.D. London, F.R.C.P., Physician to Guy's Hospital, Lecturer on Materia Medica and Therapeutics at Guy's, late Demonstrator of Morbid Anatomy, and Curator of the Museum, etc., etc. London: Robert Hardwicke: 1866.

The Causes and Treatment of Imperfect Digestion. By ARTHUR LEARED, M.D. Dub. and Edin., M.R.I.A., M.R.C.P. London, Senior Physician to the Great Northern Hospital, Physician to the Royal Infirmary for Diseases of the Chest, late Lecturer on Practice of Medicine. 4th Edition. London: John Churchill and Sons: 1866.

ALTHOUGH not ranking among the causes of death, indigestion ranks high as a cause of suffering—suffering to the dyspeptic himself and to those that surround him—and is the source of much lassitude, irritability, and melancholy. We doubt, indeed, whether it is not in our time entitled to the first rank as a depressor of activity, bodily and mental; whether it does not diminish the working power of men more than any other malady. It is thus a disease of vast importance to the community and to the physician; and it can scarcely be matter of astonishment that we find on our table five new books devoted to its elucidation.

And excellent books they are. Each different in plan, but each characteristic, and the work of a man who has successfully grappled with the subject. Indeed, had we the misfortune to labour under dyspepsia in any of its Protean forms, we would with all confidence entrust ourselves to any of the five.

Yet how completely they differ in arrangement and style, while their subject is the same, and the views they propound not very materially different! Each writer having been an original and careful student, treats of the subject from a particular view-point of his own. Dr Chambers, as an experienced clinical physician, founds upon the prominent clinical characteristics. Dr Pavy, as a physiologist as well as a physician, starts from the physiological process, and describes its different modifications. Dr Leared, as a practical physician, aiming at the cure of patients, and desiring to give the results of his experience in the briefest possible form, founds to some extent upon the causes of the affections. Dr Habershon, with a training somewhat like Dr Chambers', has respect to the clinical features; and Dr Wilson Fox, as a pathologist, insists upon the morbid anatomy and pathology of the affections.

Each of these plans has its merits, but, in our opinion, Dr Fox's is the best, and for completeness and satisfactoriness, we place his work at the head of the series. It gives a sufficiently minute and yet comprehensive account of all the maladies; and its systematic arrangement is such as to enable the reader clearly to conceive of the whole subject. In some respects, however, it cannot bear comparison with Dr Chambers' work. He is perhaps the most vivid and brilliant of living medical writers; and here he supplies, in a graphic series of illustrations, bright sketches from his well-stored portfolio. His is an admirable clinical book—an excellent companion to Dr Fox's systematic work. To one who knows the subject, it is at once interesting, instructive, and suggestive; but to one who may be studying the matter for the first time, it could give but an imperfect conception. This defect is also observable, though to a less extent, in the works of Leared and Habershon; while each of them is entitled to praise for well-used experience and soundness of opinion; and Dr Pavy's book, though founded on a different plan from that of Dr Fox's, is like his in giving a fair systematic account of the subject. We propose to give a brief analysis of Dr Wilson Fox's work, and then to refer to certain special points in each of the others.

Dr Wilson Fox, nearly ten years ago, contributed an interesting paper on the Pathology of the Glandular Structures of the Stomach in the Medico-Chirurgical Transactions. We were therefore not surprised to find that he had made morbid anatomy the basis of his classification. His first chapter is devoted to a discussion of the nosological classifications of dyspepsia; his second to the general symptomatology of the stomach; his third to the general symptoms and causes of dyspepsia. These we shall pass over without remark, excepting that they give a very good account of the matters treated of. The remainder of the work is devoted to a description of the four great forms of dyspepsia; these we shall consider in detail. They are—1*st*, Atonic dyspepsia; 2*d*, Neuroses of the stomach; 3*d*, Acute gastric catarrh, or inflammatory dyspepsia; and 4*th*, Chronic inflammatory dyspepsia, or chronic catarrh of the stomach.

1. *Atonic Dyspepsia* is usually an accompaniment of general asthenia. It may result from impaired nutrition of the stomach, from diminution of digestive power, from alteration of nervous influence, or from congestion. Its morbid anatomy is in many cases, though not in all, characterized by atrophic changes, which may be simple or combined with fatty degeneration, may be a result of inflammatory action or associated with cancer in distant parts, *e.g.*, the mamma, or with febrile states of the system. The symptoms which characterize the affection are the following:—The tongue is broad, pale, and flabby, often marked with the teeth; the appetite is usually, though not always impaired, sometimes capricious; there is a feeling of weight in the epigastrium, particularly after food; pressure causes little pain; thirst is not marked; the digestion is slow; flatulence and eructation frequently come on some hours after eating; there is occasional gastrodynia; the impairment of digestive powers is about equally marked in relation to albuminous, starchy, and oily and fatty substances; soups and broths specially disagree. There is a tendency to constipation, occasionally varied by an attack of diarrhœa. The voice is husky, and the breath often heavy and offensive. The heart's action is sometimes tumultuous, sometimes intermittent. The pulse is feeble. There is occasional dyspnœa, and a frequent tendency to sigh. There may also be cough, not unfrequently from a relaxed state of the uvula. There is no fever. The urine is generally natural. The nervous symptoms are languor and weariness, especially after meals; drowsiness, impairment of mental activity. This ordinary set of symptoms may be occasionally, for a time, altered by the occurrence of an acute inflammatory attack. Cases such as this are familiar to every practitioner; we therefore turn with interest to the treatment. This is described under two heads—regimenal and dietetic, and medicinal. To the former belong the rules, that food should never be taken in quantity beyond what the stomach can digest; that it should be of the simplest character, and only once cooked; that

diluted alcohol may be taken with meals, being an excellent stimulant to the stomach; that exercise on foot, horseback, or the carriage, change of air, and baths are to be recommended. Of the medicinal treatment, he remarks that it should consist, *first*, of tonics, in order to permanently increase the power of the organ and of the system generally, as iron, nux vomica, or strychnia and quinine; *secondly*, of stimulants or stomachics, to increase the secreting power of the stomach, as alkalies, cold water, diluted alcohol, ether, sugar, chickory, ipecacuan, nitrate of bismuth, and dilute solutions of common salt; *thirdly*, of adjuvants, to supply materials in which the gastric juice is deficient, as mineral acids and pepsine; and *lastly*, remedies to meet particular symptoms, as constipation, flatulence, and the like. This outline of treatment appears to us very judicious, and, as given in detail in the work, is well worthy of attention.

2. *Neuroses of the Stomach.*—With regard to the morbid anatomy of these affections we are as yet ignorant, and it is only by analogical reasoning that we form an idea of their pathology. As to the causes, it is evident that the female sex is much more liable than the male, and that the period of sexual activity is its chosen time. Exhaustion and depression of the system from excessive sexual indulgence and self-abuse, anæmia, chlorosis, defect of food, hysteria, hypochondriasis, malarias and gouty poisons, and long-continued excessive indulgence in alcohol, are all ranked among its predisposing causes. Among the exciting may be mentioned sudden emotion, the abuse of stimulants and condiments, and influences propagated from distant parts by means of the reflex nervous system. The symptoms which characterize this affection are principally pain, vomiting, and certain forms of hypersecretion. As to the treatment, the regimenal and dietetic should be a modification of the plan recommended for atonic dyspepsia. Of medicinal agents, iron, especially the carbonate, in 5 gr. doses, may be useful. Nux vomica is good in gastrodynia, and relieves pyrosis. Nitrate and oxide of silver, ½ to 1 grain, thrice daily before meals, relieve pain. Opium is very valuable, given by the stomach or as an enema an hour before meals. Bismuth and magnesia, kino, and the sulphate and oxide of zinc are also useful. Hydrocyanic acid is uncertain. Plasters of belladonna or opium, or hypodermic injection of sedatives, may relieve pain. In cases of vomiting we may feed by enemata, and give milk by the mouth, alternated with iced effervescent drinks or champagne. Oxalate of cerium, 1 to 2 grains in pill, is in some cases very useful. In heartburn of pregnancy, hydrochloric acid, with tincture of nux vomica, often affords relief. Pepsine, baths, iodine, and belladonna, are all useful and appropriate in certain cases. For want of space we must omit some matters of treatment; but our quotation shows how extensive and complete Dr Fox's discussion of this form of dyspepsia is.

3. *Acute Gastric Catarrh, or Acute Inflammatory Dyspepsia.*—In

describing the pathology of this disease, Dr Fox commences by quoting the well-known records of St Martin's case; but he gives, in addition, the result of many post-mortem investigations. Hyperæmia, which doubtless exists during life, is then, as a rule, absent. The mucous membrane is swollen and opaque, from the cloudy swelling of its elements. The gland cells are, in some cases, large and cloudy, and tend to break down, with or without fatty degeneration. Distention of glands, with such degenerated material, produces the pustule-like appearance observed by Dr Beaumont. In this condition there is no secretion of gastric juice, but an abundant discharge of alkaline mucus. The membrane is often soft. The solitary glands, which are common in children, but rare in adults, are found large and prominent, crowded with cells and nuclei, and large patches of tissue are sometimes infiltrated with cell elements corresponding precisely to those seen in them. The structure Dr Fox identifies with the lymphatic structures described by His and Frey as existing along the intestinal tract. This condition markedly increases the swelling, opacity, and the whitened condition of the membrane. The solitary glands sometimes ulcerate, and form deep follicular ulcers. Dr Fox has traced their formation in cases of tubercular phthisis, in typhoid fever, and in cholera. These little ulcers are quite distinct from hæmorrhagic erosions, which are also frequent. In septic cases, sloughs of mucous membrane, ½ to 1 inch in diameter, sometimes separate. Free exudation on the surface has been described in diphtheria and croup; and Cullen describes a condition, which he terms gastritis phlegmonosa, which, however, is very rarely met with.

The symptoms of this malady are well known as those of sick headache, loaded tongue, epigastric pain, anorexia, fever, constipation or diarrhœa, and depressing headache. Dr Fox describes seven varieties, viz.:—1*st*, Acute indigestion; 2*d*, Febrile affection, the fever secondary to the gastric affection; 3*d*, Catarrh, complicating the exanthemata and other acute diseases; 4*th*, Acute catarrh from alcoholic excesses; 5*th*, Acute catarrh in infants; 6*th*, Gouty inflammation; and 7*th*, Severe inflammation from irritant poisoning. Among the causes he reckons exhausting diseases, perhaps starvation, irritants, decomposing meat, shellfish, excessive indulgence in cold water, epidemic influence, febrile diseases, pneumonia, pregnancy, gout, rheumatism, and various influences. As to *treatment*, our author recommends rest to the stomach, and to the body generally; hot fomentations or leeching over the stomach; emetics and purgatives; 3 to 8 grs. of calomel, followed, after some hours, by castor-oil. Ice, opium, bismuth, and carbonic acid, are all useful sedatives to the irritated stomach.

4. *Chronic Inflammatory Dyspepsia, or Chronic Catarrh of the Stomach* is characterized, post mortem, by a certain degree of vascularity, increased thickness and toughness of mucous membrane, accompanied by change of colour, frequently to a slate gray.

Here, as in the acute affection, there is frequently an increase of lymphatic structures, both in the glands and the stroma; and degeneration of various kinds, affecting the glands and other structures, frequently occur. As to its causes, not the least frequent is atony of the stomach, which leads to retention and decomposition of food, but the disease frequently remains after an acute attack, after long standing congestion from venous obstruction, habitual excess at table, indulgence in spirits, the irritation of cancer or ulcers, and, perhaps, constitutional syphilis. The *symptoms* which characterize it are weight, oppression, distress with flatulence, particularly after meals. The appetite is various, capricious, but easily satisfied. After a time a sinking empty feeling is experienced; thirst is great; the breath is heavy and offensive. The food rarely causes pain, but commonly heartburn and acidity. The state of the tongue varies. Sometimes, when the catarrh accompanies atony, it is broad and flabby, with the papillæ enlarged. In more irritative forms it is red, raw-looking, the papillæ prominent. In old people and hurried eaters it is often coated with fur; rarely it is natural. Constipation is frequent, and piles not uncommon. The skin is subject to eruptions, the nose and cheeks are red, the hair dry and harsh, and the teeth carious. There is a tendency to coldness, and in advanced cases to emaciation. The urine is apt to deposit urates, earthy phosphates, and oxalates. There is a singular languor, headache, anxiety, want of sleep —or, if sleep be obtained, it is unrefreshing. The heart's action is irregular. There is sometimes vomiting, especially when venous obstruction exists, and the vomited matter frequently consists, to a great extent, of mucus. The *treatment* should be adapted to the cause. Bismuth, magnesia, nitrate of silver, are potent in allaying chronic catarrh. Oxide of zinc, alum, matico, and arsenic, are also of value. Mineral acids, antacids, pepsine, purgatives, podophyllin, Rochelle salts, mineral waters, belladonna, ice, opium, and hydrocyanic acid, have all special usefulness in particular circumstances.

But for details of this and much more that we would willingly enter upon, we must refer the reader to the work itself. Under the four forms which we have traced in outline from Dr Fox's careful description, we think we can include the varieties of dyspepsia with which we meet in practice; and therefore we regard the work as an important contribution to medical literature. The morbid appearances are illustrated by a series of well-executed engravings.

Having devoted so much time to Dr Fox, we must pass very hastily over the other writers. The reputations of Drs Leared and Habershon are already so high that their books are independent of the critic's praise. Dr Habershon's book on abdominal diseases is well known and highly esteemed, and the present work should enhance his reputation. Dr Leared's truly admirable little work has reached its fourth English edition, and has been translated into French: surely that is sufficient testimony to its merits. Dr Chambers' work is, like all he publishes, original, brilliant, and interesting. It has much of the vivacity of a French book, while that of Dr Fox is not altogether free from the involved style too common among the Germans. Dr Chambers has abandoned his formerly expressed idea that a classification of indigestion might be based upon the glands whose secretion is at fault in each form. He anticipated that he would find a salivary dyspepsia of starch, a gastric dyspepsia of albumen, an intestinal dyspepsia of fat, but he now confesses that observation has not fulfilled his anticipations. He now thinks that "a very practical division of cases of indigestion is derived from the substances which is indigested—viz., which of the chief constituents of the diet, whether (1) starchy and saccharine, (2) albumenoid, (3) fatty, or (4) watery food, most exhibits the failure of the function." In illustration of these varieties, Dr Chambers gives many cases in a long and interesting chapter, but we must say that, from all we have seen of dyspepsia, a classification such as the above does not satisfy us.

His third chapter is devoted to "habits of social life leading to indigestion," and the following six to abdominal pains, vomiting, flatulence, diarrhœa, constipation and costiveness, and nervous diseases connected with indigestion. Everywhere he is graphic, and his work supplies numerous practical hints of much value. As an example of his vivid style of recording cases, we select the following, which is not more striking than many throughout the work:—

> "In November 1859, I was requested to visit a lady past middle life, who, when I entered her library, certainly looked the picture of robust bloom. 'Dr Chambers,' said she, 'what is a British matron to do who habitually eats too much?' The question suggested the shortest of replies. 'Aye, it's very easy for you to say "Don't;" but, if I didn't, I should be a widow in a week. You know how old and infirm Lord C—— is. He has always been used to feed highly, and if I cut the dinner short, or did not encourage him by my example, it would be his death.' It seemed that the symptoms of eating too much were a sense of repletion and a want of sleep during the night, feverishness in the morning, a sort of worrying fidget in the bowels, sometimes followed by constipation, sometimes by fetid semi-liquid evacuations, never by natural motions, frequent headaches, and a tendency to depression of spirits. Sometimes she was attacked in the night by what she called 'spasms,' that is to say, severe pain in the epigastric and umbilical regions. If that ended in vomiting, she experienced rapid relief, and was better than usual for several days.
>
> "My prescription was an aloës and myrrh pill before dinner daily, and a recommendation of a dry diet as mixed and varied as possible, avoiding only soups, slops, butter, and fat. But I doubt if it was quite successful till the exciting cause of this virtuous intemperance bore his many years and honours to the grave."

Dr Pavy's method is to trace the food in its transit along the gastro-intestinal tract, to indicate its natural transformations, and then to explain any modifications of the process. We have not left ourselves time to enter upon a minute consideration of the work, which, however, we can heartily recommend to the attention of our readers; but we may refer to his plan of producing an article of nourishment for the invalid by dissolving meat by a process of artificial digestion. He justly points out that the extracts of meat, now so popular, do not really contain the most nutritive parts of the meat, and expresses astonishment that a solution of meat by a process of artificial digestion had never been turned to practical account for nourishing invalids affected with feeble digestion. In conjunction with Mr Darby, he has succeeded in preparing a material of a very promising character. This material is easily absorbed, and that without undergoing any further change, and has been successfully administered both by the stomach and the bowel. Though not so palatable as the extract of meat, it may be so flavoured as to be by no means disagreeable. We commend this idea of Dr Pavy's to the attention of the profession, in the expectation that it may ere long be tested and found of value.

On Joint-Diseases; their Pathology, Diagnosis, and Treatment: including the Nature and Treatment of Deformities and Curvatures of the Spine. By HOLMES COOTE, F.R.C.S., Surgeon to St Bartholomew's Hospital, Consulting Surgeon to the National Orthopædic Hospital, etc. London: Robert Hardwicke: 1867.

FROM the nature of its subject, a work like this must be exceedingly interesting to the practical surgeon; from the eminent position of its author, as surgeon to Bartholomew's, our interest includes respectful attention. After careful study of it, we rise from the perusal of this work with the feeling, that while there are many omissions, not a few statements which the transcendental pathology of the day might at once stamp as inaccurate or old-fashioned, and much that is really behind the age, there remains a very large amount of thoroughly well-considered, ripe experience, which makes Mr Coote's book a very valuable addition to surgical literature.

It is always the case; a man at thirty may write an excellent systematic treatise, may display vast reading, great erudition, may luxuriate in the newest and most transcendental German pathology, may invent the most elaborate and novel operations,—there is still a youthfulness and crudity in the flavour of it all; while a man of fifty, granted only opportunities for gaining experience, and eyes to avail himself of it, can write a book with far less accuracy perhaps, with less novelty and freshness, but with a mellowness and full flavour which time alone gives, and which, like old wine, is not only safer, but also pleasanter to take.

This ripeness is not easy to describe or to analyse, but can at once be appreciated by a discerning palate. In the present work it shows itself in various ways,—in a certain absence of strong lines of distinction between allied and frequently co-existent diseases; in a breadth of view which takes into consideration the age, general health, and circumstances of the patient, as well as the special local disorder for which he comes under treatment; and lastly, and chiefly, in the patience which always characterizes a ripe surgeon, resulting from the confidence which experience has taught him in the powers of nature, and the distrust which he learns of the knife unaided by nature.

Feeling so strongly the value of the general tone of the work, we may be able, in a brief analysis of its contents, the more faithfully to point out those places where we think maturity has become archaic, and conservatism obstructive.

In the introductory chapter we are told that "two structures only of all those entering into the composition of a joint are liable to primary inflammation," namely—

1. The synovial membane;
2. The cancellous tissue of the head of the bone;

and also, that *inflammation never occurs in cartilage.* And in Chapter II., a very brief account of synovitis, suppuration of joints, and pyæmia (ten pages in all), is all that we are supplied with under the head of General Pathology; and so far it is both antiquated and insufficient.

Chapters III. and IV., on synovitis and ulceration of the cartilages, are practical and good. In the chapter on synovitis there is a curious, absurd, and misleading table introduced, which we have been quite unable to find in Andral and Gavarret's most valuable observations on the condition of the blood in rheumatism, but which, with an omitted column and some remarks which make it a little less misleading and more intelligible, we have discovered in Dr Copland's "Medical Dictionary." We quote the following sentences, as explanatory of the severe pain felt during ulceration of the cartilages, and also as explaining Mr Coote's view on the pathology of that disease:—

> "Morbid changes in the cartilage are not necessarily attended by pain of severe character; but where the disintegration goes on at its deep or attached surface, it is associated with an inflammatory disturbance of the articular head of the bone. Then the cartilage becomes loosened by the action of a layer of vascular, highly-sensitive granulations, which push the cartilage in flakes into the joint. It is these granulations which, when pressed by a sudden jar of the limb, give rise to the intense suffering of which patients in this disease so bitterly complain. The limb, during the day, is held by muscular contraction in the flexed position, that being the one in which the ligaments are relaxed, and the pressure of the opposed bony surfaces the least; but should the patient drop off for a moment to sleep, the muscles become relaxed, a slight movement of the limb ensues, the granulations are compressed, and with a violent plunge of pain the patient starts up awake. It is obvious that the practice of straightening a limb thus diseased is faulty in principle, and calculated to aggravate the

suffering. By so doing the surgeon presses together and bruises highly sensitive parts, and renders permanent that pain which was previously temporary and uncertain."—Pp. 48, 49.

In chapter V. excellent practical details are given on the manufacture and use of splints, dangers of forcible extension in distorted limbs, and the value of gradual patient restoration of length. It ends with the important observation, that pain may, in a joint, coexist with a gradual process of repair, and need not be an indication for operative interference—a very useful reminder in these days of excisions.

In Chapters VI. and VII., the special diseases of the joints of the upper and lower limbs are discussed separately. With regard to the treatment of strumous disease of the wrist by excision, Mr Coote has not sufficiently studied the excellent results of this operation, when properly performed and in suitable cases, by Lister and others, or he would not have endorsed the opinion of Dr Hodges, "that excisions of the wrist are operations not sanctioned by sound judgment or conservative surgery."

Under the head of *club-hand*, Mr Coote mentions those cases only in which the radius is congenitally absent, and the hand imperfectly formed. Surely he cannot mean to ignore the existence of cases of club-hand in which both radius and ulna are perfect, and which can be at least partially improved by tenotomy and proper splints; yet he says, "no surgical interference is likely to be available in these cases."

On the question of excision of the knee-joint, Mr Coote's opinion will be read with interest, and received in some quarters with strong opposition:—

"I am no strong advocate for the operation of resection of the knee-joint under any circumstances, and disapprove of it almost unconditionally in children, in whom the limb afterwards becomes, year by year, weaker, more withered, and less equal to the opposite member."

On the general question Mr Coote adopts Dr Hodges' well-known statistics, and his opinion that this operation should be practised with great reserve, that it should not be preferred to amputation in traumatic cases, and that in no case should it be partial, *i.e.*, that the patella should always be removed.

Mr Coote speaks favourably of the result of patience in the treatment of strumous disease of the ankle in children:—

"But the diseases are, for the most part, of a more chronic character. The foot is swelled, especially about the malleoli. Abscesses form, which discharge either a thin pus or a thicker fluid mixed with flakes of dead tissue and tuberculous deposit. Sinuses form, which lead down to the bone; and this condition in young subjects will last for several years; but in the end, children, almost without exception, do well, if placed under circumstances at all favourable for recovery. The great danger which they run is from surgical interference. It is said that such a part is 'spoilt,' and parents lose heart, and listen to the suggestion for operation. My advice is patience. The patient can walk on a common wooden leg, the limb bent at right angles, so that the foot never touches the ground. By such means exercise may be taken, and health preserved, and nature in due time perfects the processes of repair. But when once a wound is made, it usually gapes, and will not heal; the discharge becomes abundant, the swelling greater, and the general condition is rendered more unfavourable."—Pp. 147, 148.

Chapter VIII. includes diseases of the temporo-maxillary articulation, and of the spinal column; and in it we have a good account of caries, and many sensible remarks on the causation of spinal disease. In the treatment we find too much trust placed in spinal supports, and too little in the recumbent posture.

Space forbids a longer analysis of the remaining chapters—on the injuries and diseases of the various structures at or near joints. The remarks on hysterical affections of joints, and on sprains, are instructive, as also the chapter on the treatment of contracted toes and corns.

Under the head of treatment of cicatrices after burns, we have an interesting record of a case in which this most distressing and obstinate condition had been treated without any incision, by slow, gradual extension by a suitable apparatus. The case will repay perusal. All through this book we see the great amount of confidence which the author places in the use of suitable mechanical appliances, aided by rest and attention to the general health, which bears out his statement in the preface:—

> "I have viewed with regret a somewhat growing inclination for the early performance of operations, particularly resections; and, much as I admire the spirit of conservatism with which that proceeding is characterized, as opposed to amputation, yet I must confess a misgiving as to its general applicability, and feel a desire that the advantages to be derived from mechanical treatment, and the enforcement of complete rest, should be tried more continuously, and with yet greater patience."

Archives of Dentistry. Edited by EDWARD TRUMAN, Esq. London: John Churchill and Sons: 8vo: 1865.

SURGERY is enabled with much more facility than Medicine to become regional or departmental in its practice. Accordingly, we find daily added to its ranks those who devote themselves more especially to one or other of these—it may be their favourite or their allotted branches. One of these branches, and perhaps the most necessarily special of them all, is Dental Surgery. Until a comparatively late period, this department was left outside the boundary of legitimate medicine. Its painful and occasionally serious character, however, called on its being taken up by practitioners of some kind, and it unfortunately fell into and was retained in the hands of unqualified individuals, until tooth-drawing and quackery became proverbially connected. Matters have now taken a change; and no better indication of the extent of such a change could be desired than exists in the production of the volume now before us.

In the first paper is discussed the essential importance of a knowledge of dental surgery to medical men. It is chiefly in respect to the supply of artificial teeth that the writer here expatiates,—and there seems much good sense in the proposition that a medical man, although not perhaps conversant with the technicalities of their manufacture, should at least know, as he does of splints and bandages, when artificial teeth are required, how they are to be applied, and when they are what they ought to be; above all, that every medical man should be competent to undertake all the surgical preparation of a mouth for their reception. There is just one other view of the case omitted, and that is, that all dentists should be qualified as surgeons themselves, seeing the inference above suggested to be, that medical men leave the whole matter in their hands. Why should disease of the teeth more than that of the skin, eyes, ears, uterus, or other parts be considered as demanding either mere partial and fractional qualifications or none at all? If special diplomas, such as some now existing, be considered sufficient for this branch, why not have similar subordinate diplomas for the others? That a compromise between the full qualification of a surgeon and none at all is now so much sought after, seems, however, to be a sign of matters drifting in the right direction, and with time we may look for a better state of things.

Much that is interesting to dental practitioners will be found in the papers of various authors collected here. Severe cases illustrative of the practice of what is termed Risodontrypy, or drilling into a carious tooth beyond the seat of decay, are suggestive in many ways. The operation consists in boring into the root so as to divide the pulp and cut off the disease from the general system, if we may so speak, the outlet of pus being probably of less moment. Perhaps instead of τρύπη as the last component of the word, τρῆσις might convey the meaning better; the term being more correctly rendered Rhizodontresis,—thus signifying a hole *bored* in a tooth-root rather than one existing there.

In a paper on the pathology of dental caries, by T. White, Esq., M.R.C.S., the vital theory is adopted. And it is curious to observe in the same volume a review wholly opposed to such theory, in commenting on a work where the author long ago advanced the same doctrines regarding the vital nature of dental caries. Indeed, the old doctrine of such lesion being a mere decomposition instead of a disease of the tissues involved, is one of the many proofs how much wanted among dentists is the possession of an adequate medical education.

It is impossible in the limited space of a review to do more than select a few papers from a collection such as this volume presents; and in concluding the notice of its contents, only one more subject need be touched upon. This is the translation of Dr Mistscherlich's remarkable paper on the transplantation and replantation of teeth. Not only were teeth extracted and replaced found to adhere, but teeth selected from a store lying by him were inserted into the alveolar cavity left on extraction—sometimes even after being filed-up to fit the socket; and in very many cases the organs so inserted became firmly, and remained permanently fixed. This, however, in these cases, was found to be due to absorption and pitting of the surface of the dead fang and the deposit of new bone on the sides of the alveolus, fitting into, and embracing without becoming attached to the contained root. The paper is a long one, but is curious in its way, and will repay perusal.

Das Chloroform: Eine Zusammenstellung der bisher über dasselbe gemachten Wichtigsten Erfahrungen und Beobachtungen vorzüglich in Physiologischer und Medizinischer Beziehung. Von Dr FRIEDRICH SABARTH. Würzburg, 1866.

Chloroform: A Collection of the most important Researches and Observations upon the subject, especially in reference to Physiology and Medicine. By Dr FRIEDRICH SABARTH. Pp. 276.

THIS work is one of that class usually regarded as typically German. It is a monument of painstaking perseverance and of laborious industry. The author publishes no original investigation, and he appears to think that he can best advance our knowledge on the important subject of the physiology of chloroform and its therapeutical application, by collecting and arranging what has been already written. Doubtless his opinion is correct; and his success in searching through the medical literature of recent years appears to have been as nearly perfect as can be expected. Beyond the arrangement of this matter, and a short introductory explanation, the volume contains nothing original. It will serve as a valuable common-place book for writers on Materia Medica; and Dr Sabarth may at least have the satisfaction of learning that he has deservedly gained the grateful thanks of all who are specially interested in therapeutics. It is to be regretted that the work has not been supplied with an index, but this defect has been considerably diminished by the admirable method of arrangement. If a labour of this description should be undertaken for any remedial agent, chloroform has prominent claims; and there can be no better guarantee for the correctness of this opinion than this collection of abstracts of the many hundreds of papers which have been published since its anæsthetic properties were pointed out by Sir James Y. Simpson, in 1847.

A Description of certain Appliances for the Cure of Stammering. By ROBERT BATES, U.S., America.

THIS pamphlet consists of a description of three ingenious little instruments, to be worn in the mouth, for the relief or cure of stammering. The invention proceeds upon the principle that the spasmodic distress of the stammerer arises from obstruction to the free exit of the breath in pronouncing certain letters, represented by the three sounds T, P, and K. In the first the author finds the obstacle to expiration in the close and persistent contact of the tongue against the palate and back of the upper teeth; in the second, the closure of the lips produces this result; and in the third the difficulty seems to occur so far down as the glottis. Each of the instruments serves for one of these three varieties of this affection, and acts as a sort of safety-valve, during the wear of which the escape of the otherwise pent-up air is fully secured. The invention seems to have been attended with great success in America; and, to all appearance, is well calculated to effect the object in view. The surest test, however, of its efficacy, would be its practical application in some of our hospital patients affected with stammering, and a very few cases would soon decide its fate. The instruments are to be had of Mr Wellspring, 3 Chandos Street, London.

Part Third.

MEETINGS OF SOCIETIES.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXVI.—MEETING XIII.

22*d May* 1867.—Sir JAMES Y. SIMPSON, Bart., *President*, in the Chair.

I. CASE OF UMBILICAL HÆMORRHAGE. BY DR KEILLER.

Dr Keiller gave an account of a case of umbilical hæmorrhage, in which he transfixed the root of the cord by means of needles. The treatment arrested the bleeding, but the child died subsequently in a jaundiced state. On post-mortem examination, the umbilical vessel, and those up to the liver, were diseased. Dr Keiller had the preparation in his museum.

Sir James Simpson said that he had twice tried the needle and the transfixing ligature in such a case, unsuccessfully. In another case, with Dr Moir, the child recovered by the use of the perchloride, after the needle and ligature had failed. Dr Radford was the first to use the ligature in this way in such cases. Sir James said that Dr Hamilton had been successful in two cases, and Mr Syme in one.

Dr Burn had twice tried the ligature unsuccessfully. In one of the cases the child died; in the other the hot wire was successful.

Dr Ritchie mentioned one case, of a child nine months old, where there was a small orifice at the umbilicus, with ulceration. Sulphate of copper was applied, but the hæmorrhage continued for one week. The citrate of iron and citric acid, internally, stopped the bleeding. A small vascular tumour, like a currant growth, formed at the umbilicus.

II. A PECULIAR CASE IN OBSTETRIC PRACTICE. BY WILLIAM BRYCE, M.D., DALKEITH.

The case which I bring before the Society to-night is one that occurred to me a great many years ago; so long ago, indeed, that I find it is only No. 44 in my Register. However, from the notes taken at the time I hope I shall be able to make it intelligible to the meeting.

I was called on the 2d September 18—, at 10 P.M., to visit X. Y. Z., a primipara. On my arrival, I was told by the patient's mother that she thought her daughter was going to be confined, although it was not yet her full time. I found the patient in bed, complaining of violent pain in the abdomen, and of a feeling of intolerable distention. The pulse was quite normal; there was not the slightest tenderness; the pain was constant and confined to the hypogastrium, and not affecting the os uteri. During my examination, I was struck with the peculiar appearance presented by the abdomen, which was of an enormous size.

On closer examination of it, I found the uterine tumour lying across the hypogastrium, the greater part of it in the left iliac fossa and not reaching to within two inches of the umbilicus. The right lumbar and iliac regions were filled by another tumour, evidently quite separate and distinct from the uterine one; while all the rest of the abdomen was very much distended with flatus, and gave a highly exaggerated tympanitic sound on percussion. On passing my hand over the uterine tumour, it was arrested a little below and to the left of the umbilicus by a foot, which appeared to be lying immediately within a very thin abdominal wall, it could be so distinctly traced. This foot, when touched, glided quickly from under the hand, and at the same time the uterine tumour was seen suddenly to enlarge, as if by the spring of the little eccentric unknown back into its nest, when it found it was discovered wandering beyond its prescribed limits. Having examined this point carefully at every visit, and always with the result as just described, I formed various theories to account for it, but the more sail I put on, the farther was I drifted out to sea. My first thought was extra-uterine pregnancy, but a vaginal examination told me that could not be. Again, I thought of tubular conception; but then, how was I to account for the cavity of the cervix being filled with what I took to be a fœtal head? Then, was it a case of twins, with one in utero and the other not? I saw no solid foundation for any of these fancies to rest on, so I resolved to give up all idea of accounting for it myself, and seek some higher authority.

I told the friends that I could give no opinion about the case as yet, further than that there was something very unusual about it; that I saw no sign of labour setting in, and that I regarded the present as an attack of colic. I prescribed an opiate draught, and directed the bowels to be opened by an enema, containing, *inter alia*, some tincture of assafœtida.

From her own account of herself, I considered her to be about the seventh month of utero-gestation.

The opiate relieved the pain for some hours, and the enema acted on the bowels, but did not reduce the distention in the least degree. On visiting her next morning early (*i. e.*, the 3d), I found that inflammation had set in. The pulse was now rapid and strong, the pain had returned with greater severity, and was felt chiefly in the left side; there was great tenderness all over the lower part of the abdomen, which was still in the condition already described. There was almost constant vomiting, very much increased by lying on the left side. She pointed to her right side, saying, "Oh, doctor, there's a river in my side!" I heard the gurgle that gave her this idea, but being entirely ignorant of the nature of the tumour in the right side, I considered the sound to be produced by gas and liquid in the gut. I ordered opium to be given every four hours, and in the evening ordered the calomel and opium pill every four hours.

On the 4th and 5th there was no change in the symptoms, except that the opium had somewhat relieved the pain; but the distention of the abdomen was increased, and she complained still more of "the river in her side." Indeed, she complained of little else. At every visit, before I reached the bedside, she would turn round her head and again repeat, "Oh, that river in *my* side!" It was in vain that I tried, every time I saw her, to make out what could give rise to such a strange sensation.

On the 6th, the vomiting was much less frequent, except on turning to the left side, when it returned as violently as ever. At my last visit on this day (the 6th), I again explained to her relatives the critical nature of the case, and requested a consultation. To this they at once agreed. I accordingly went along early the next morning for Professor (now Sir James) Simpson, who saw her with me at 12 noon on the 7th. He examined the case with the greatest care and minuteness for a whole hour, but was unable to come to any satisfactory conclusion as to the actual state of matters, as far as the uterine and the other tumours were concerned, further than this, that labour would certainly set in in less than forty-eight hours; and that the amount and intensity of the inflammation were so great, it was impossible the patient could live. The only supposition he could make was, that there was an opening in the uterus, for when the foot was touched, it appeared to retract and pass into the organ; or else the uterine wall was so very thin that the retraction of the foot gave rise to the idea that it was passing into a cavity.

At 6 P.M. of the same day (7th), I was called in haste to her, and on my arrival I found labour far advanced, the pains preternaturally strong, and the head distending the perinæum, which was very tense, as there had been no previous relaxation of the passages, and no time given for it. I at once put her under the influence of chloroform, which lulled the pains for a few minutes. I was engaged dropping the chloroform on the towel when the next pain came on with such suddenness and violence as to expel the whole child before I could get to the support of the perinæum. On drawing the child from under the bedclothes, I was surprised to find the umbilical cord torn completely through. After tying the fœtal portion of the cord and committing the child to the attendant, I found that the placenta was retained by hour-glass contraction. I formed my hand into a cone, but the constricted portion was so firm and so high up, that I found it impossible safely to force the fingers through or dilate the stricture. There was rather more discharge than is usual, but as it did not amount to hæmorrhage, I did not attempt to force a passage. I used firm external manipulation on the uterus, which I found not sufficiently rounded; and, at the same time, began again to get her under the chloroform.

In a short time I felt distinct uterine contractions come on, and the organ assume a more rounded shape. The discharge at this time increased so much as to make me feel anxious. I therefore resolved to complete the third stage as quickly as possible; and having now got her quietly asleep, I introduced my hand into the cavity of the cervix, through the os internum and up to the constriction, which I now found somewhat relaxed. The chloroform, the external manipulation with the left hand, and the gentle, but steady and persevering upward pressure of the conical right hand, soon enabled me to get admittance to the upper uterine pouch, when I easily embraced the whole placenta in my hand, and brought it clean away with me. I brought it slowly down, and as my hand and it descended, I felt the organ assume its natural shape, and finally become unusually small and so firmly contracted as to relieve my mind from further fears as far as the labour was concerned. There was no morbid adhesion of the placenta; it came away perfectly easily, was not large, and appeared quite healthy. The only thing I noticed about it was a deep groove, as if from pressure.

This matter of the delivery of the placenta is not connected with the interesting part of my case, and I have described it thus minutely in consequence of recent discussions in the Society as to the existence of such a condition as hour-glass contraction. I can only say, that I wish that those who deny its existence had had their hand in that uterus.

The complete severance of the cord was not due to a diseased condition. It was unusually short, and would not have been torn had the placenta been free to come with it, but it was too firmly held in the upper uterine pouch. The expelling pain was not powerful enough to overcome the contraction, but was too violent for the cord, thus put upon the stretch, to withstand with impunity. Why was there hour-glass contraction and not inversion of the uterus? The great reduction in the size of the uterus (for I wish it to be remembered that it contracted to an unusually small size) relieved the bowel of so much pressure as to permit of the passage of a quantity of flatus perfectly enormous, but without perceptibly reducing the size or tympanitic condition of the abdomen.

The child was a small one, gave a good cry as soon as born, but took the breast languidly. If not at the full time, it was certainly beyond the eighth month. A nurse was procured for it, and it lived and did well. At half-past ten P.M., lochia normal, uterus still small and well contracted. Pulse 140, small. Complains of faintness, but not to any great extent; the great complaint is still the river in the side. No reduction in the size of the abdomen. She was kept fully under the influence of opium, but no calomel, but without producing any good effect on the disease. She obtained only occasional short sleeps. The tenderness on pressure spread gradually over the abdomen, which became every day more and more distended. The pulse never fell below 140. She gradually became worse, and sank on the eighth day after her confinement, often asking me, till near the end, if I could do nothing for that river in her side.

Twenty hours after death Dr Alexander Simpson and I performed a post-mortem examination. As there was neither time nor opportunity in the house, Dr Alexander took with him for careful dissection those parts we could not sufficiently examine at the time. He kindly made out the following notes of the post-mortem appearances for me:—

"The abdomen was enormously swollen and universally tympanitic, except in the right lumbar region. The first opening through the abdominal wall permitted the escape of a quantity of air, and the incision through its whole length exposed the intestines, everywhere greatly distended with gas. The caput cæcum coli and ascending colon were placed unusually far forward, and were glued to the abdominal parietes and adjacent viscera by recently-effused lymph, flakes of which were also seen here and there among the small intestines and in the left lumbar region. The pelvis contained about a teacupful of serous fluid. The right colon was seen to be pressed forward by a large cystic tumour, which was closely connected with the colon, and was invested on its anterior surface by the peritoneum passing continuously over it from the sides of that bowel. It occupied nearly the entire right iliac and lumbar regions and a large portion of the right hypochondrium, extending from the lower surface of the liver, opposite the ninth rib, to the brim of the pelvis, and from the right side of the cavity to an inch beyond the spinal column on the left side. It was removed along with the adherent viscus, and was then found to be connected to it merely by cellular tissue, and to consist of an enormously-developed renal cyst, with the ureter arising from near the lower end, and returning upwards and inwards closely applied to its posterior surface till it reached the point where it usually crosses the pelvic brim.

"The kidney, still retaining somewhat of its proper general outline, was greatly enlarged and hollowed out into numerous cysts, all communicating with the large one, which constituted about three-fourths of the size of the tumour, which represented the pelvis of the kidney thus enormously distended. The ureter was pervious, and of even more than usual calibre in all its extent, but it was bent upwards upon the cyst so suddenly that the escape of the contained fluid was prevented, and its evacuation was not effected till the tube was dissected off up to its point of reflection, when ninety-eight ounces of healthy high-coloured acid urine, of specific gravity 1011, flowed out through the ureter. On section of the kidney, the calices were seen to be all enlarged and expanded into great cavities, and the parenchyma of the organ was so stretched over them and thinned as to be in some measure obliterated. They were all continuous with the pelvis, at the lower part of which was the opening of the ureter. This was found to open freely into the bladder, and no obstruction could be found to impede the passing of the urine from the kidney to the bladder. The left kidney was pale and flabby, and slightly increased in size. A few small cysts were noticed on section of it, but none could be detected on the surface, from which the capsule readily stripped off. The veins on the right side of the pelvis, behind the tumour, were inflamed, and the other pelvic veins and the vena cava, to some distance, were filled with densely-coagulated blood. The bladder was quite normal. The uterus presented on its anterior surface, about an inch from the summit, a minute foramen, into which the point of a small probe could be passed through two-thirds of the thickness of the uterine wall. When cut open, the os and cervix were found very much lacerated, and in an inflamed and sloughy condition. The internal surface was denuded of its mucous covering in nearly all its extent, the muscular fibres being exposed; and around the right fallopian tube were the remains of the placenta, minute pieces of which were still adhering to the uterus. The openings of both the tubes were pervious, and the tubes presented their normal appearance. The ovaries showed numerous cicatrices, and were quite healthy. The stomach and upper part of the intestines contained a quantity of fœtid grumous matter. The stomach was stained with blood, but was healthy. Liver and spleen sound."

Dr. Alex. Simpson's minute account just given of this cystic tumour so fully clears up the mystery connected during life with the tumour occupying the right side of the abdomen, and the symptoms it gave rise to, more especially that of a river in the side, that no further remark is required on that head. We have satisfactory proof of the existence of extensive and ungovernable inflammatory action. The post-mortem also reveals to us the effects of the rapid labour on parts unprepared for its violence. Was it this interference to the uterus by the pressure of the enormous cystic tumour, and the gradually increasing distention of the upper part of the abdomen, that caused this hurried and violent labour? or was it inflammatory action in the uterus itself? The first stage of labour must have been very short, if there really was a first stage. Professor Simpson and I left the house at one P.M. on 7th, and then there was not the slightest appearance of the immediate accession of labour; yet the liquor amnii escaped soon after we left, and the attendant informed me that the head had been distending the perinæum for some time before I was sent for at six P.M.; the child was born at half-past six P.M., and the placenta at a quarter-past seven P.M. The post-mortem shows the cervix very much lacerated. Did the violence of the uterine contractions force the head through a rigid os and cervix? or were they softened by previous inflammatory action, so as readily to tear when dilatation began? The excessively violent nature of the labour leads one to suppose that the former is the more correct supposition, and that the inflamed and sloughy condition of the cervix and mucous covering was the result of the violent laceration by the irresistible descent of the head.

There is another point disclosed by the post-mortem that is of interest in connexion with what I observed from the first, in the gliding away of the fœtal foot from the external touch, and the simultaneous enlargement of the uterus, but more specially in relation to Sir James Simpson's supposition of the existence of an opening in the uterus; for when he touched the foot, it seemed to retract and pass into the organ, or else that the uterine wall was so very thin as to give rise to the idea that the foot in retracting was passing into a cavity.

The foot was felt slightly to the left of the umbilicus, and the fundus of the uterus was in the left iliac fossa; the foot would be a little way from the summit of the fundus. A probe hole was found *one* inch from the summit, passing through two-thirds of the thickness of the uterine wall. After labour was completed, the uterus contracted to a very small size. Could this probe-sized cul-de-sac in the *small, firmly-contracted* organ be the same as allowed the exit of the foot of a very small fœtus when that organ was in its *enlarged condition* before delivery?

I am anxious to hear the opinion of the Society on these points.

Sir James Simpson, among other remarks, spoke of the possibility of utero-gestation being interfered with by the presence of flatus in the intestines. In illustration, he mentioned one case, visited with Dr Finlay, when at seven months the uterus was kept low down below the umbilicus, and in height seemed no higher than at the fourth or fifth month at furthest. Premature labour ensued. The child, though small, lived.

III. CASE OF ACCIDENTAL HÆMORRHAGE. BY DR R. PEEL RITCHIE. WITH PREPARATION.

This case of Mrs C., aged 28 years, is somewhat interesting, and I have therefore been led to bring it before the Society. In her first pregnancy there was threatened premature labour about the end of the seventh month; she was, however, safely delivered at the full period, on November 12, 1865. The placenta was very friable, and had patches of calcareous deposit on its uterine surface. There was no hæmorrhage. On the 11th of May 1867, I was called to her; she was then in the eighth month of her second pregnancy. On the 8th inst., she had a severe attack of diarrhœa, which continued during the next day. On the 11th, the diarrhœa was checked, but about six P.M. she, somewhat suddenly, was seized with severe pain in the loins, and with pain, which she described as "cramp," over the abdomen. In the course of the evening these pains became increased, and, being sent for, I visited her about half-past nine. Pressure over the abdomen caused great pain. On examining, I found the os uteri was high and undilated. After ordering rest, with warmth to the abdomen, and giving two grains of opium, I left a little after eleven o'clock. At that time she expressed herself as being greatly relieved. At two A.M. on the 12th, on awaking, she was alarmed by a sudden discharge of blood. I saw her soon after, and found her much alarmed; the amount of hæmorrhage was not very great; the cramp pain in the abdomen had returned. A third grain of opium was administered; and as she was free from pain, and the hæmorrhage had ceased, I left in about a couple of hours. There was a return of pain and hæmorrhage about eight A.M. During the next nine days the pain and hæmorrhage occasionally returned, but not severely. On the 21st, labour pains commenced about four P.M.; they were followed by hæmorrhage to some amount. On examining about nine P.M., I found the os was dilating; and the labour subsequently progressed favourably, with occasional hæmorrhagic discharges, till half-past one A.M. on the 22d, when it was terminated naturally. The presentation was natural; the child a healthy male. Towards the termination of the labour, Mrs C. became much excited and so unmanageable, that I found the greatest benefit in using chloroform. The placenta followed the child in a few minutes, and its expulsion was attended by considerable hæmorrhage and the discharge of large dark clots. The placenta is healthy in appearance, and does not present evidence of calcareous deposits; but there is a deep depression about three inches in diameter at the right side and towards the margin; it was filled with dark clots.

IV. CASE OF DECAPITATION. BY SIR J. Y. SIMPSON.

This paper will appear in a future number.

Dr Charles Bell suggested the use of an instrument like the epistaxis instrument for passing round the arm. He said an Arabian author had tied knots on a string to simulate a saw.

Dr Pattison said that decapitation was comparatively easy when the head was not slanting, which it was in Sir James' case.

Dr Keiller spoke of an instrument by Dr Ritchie like an écraseur, with a perpetual screw and chain; also of an instrument for passing a handkerchief round the leg in cases of breech presentation, which was shown to the Society at a subsequent meeting.

Dr Moir recommended whip-cord with crossed wood as handles, which he thought would cut the bones as well as the soft parts.

SESSION XXVI.—MEETING XIV.

12*th June* 1867.—Dr PATTISON in the Chair.

I. CASE OF EXOMPHALOS. BY DR LILBURNE. COMMUNICATED BY DR CAIRNS.

Mrs B., aged 39, was delivered of a male child in the winter of 1844, being her fifth confinement. The labour was tedious, caused in a great measure by the cord encircling the neck. On this being ascertained, it was loosened and passed over the head. When the delivery was completed, the child, which was mature and of the natural size, weighing seven and three-quarter pounds, had an umbilical hernia; the extent of the protrusion was very nearly the size of a closed fist, the diameter being two and a half inches, and the form being nearly a circle. The covering was the sheath of the cord. The tumour felt hard; it could be compressed within the walls of the abdomen to a considerable extent, but when held there, it seemed to cause pain.

The cord was tied and cut at the distance of about six inches from the tumour, and was dressed in the usual manner. The protrusion was then compressed within the abdominal walls with a pad, and the binder firmly applied over all.

The child did not take to the breast readily, but continued to whine as if in pain. The bowels acted on the fourth day, when an eruption of lichen strophulus made its appearance, and lasted for a few days. Small doses of magnesia were administered, but the child never seemed to thrive. A certain amount of pressure was kept up by means of the pad and binder, but less firm than at first. The coverings began to blacken, and the cord separated about the twelfth day. In the meantime, the child became more and more emaciated, and died on the fifteenth day, apparently from want of nourishment.

On examining the body after death, the tumour presented very much the appearance given by the drawing, which a number of people who saw the lesion pronounced good. The opening was in the form of a circle, and looked as if a portion of the abdominal parietes had been punched out. The tumour, which was firm, consisted of the greater portion of the left lobe of the liver, part of the right lobe, and the gall-bladder. There was no other deformity; and I don't see any reason why the child should not have lived.

In Underwood's Midwifery, edited by Dr Marshall Hall, the history of a case is given, where the child survived birth six months, and died from another disease. In the same book mention is made of a similar case that survived the disease, but died some months afterwards from another disease.

In my own case, I always had the idea that the mother did not care to be troubled with the child, and did not give it that special care necessary under the circumstances.

Dr Keiller had seen two or three such cases. In one, in the Maternity Hospital, the covering of the belly was so thin as to give way, the bowels protruded and the child, though it lived for some days, died. An interesting case occurred in Leith of a somewhat unusual form, when a tumour formed at the navel, and at the end of the projection there was a mass like a uterus, two inches in size, pyramidal, and with a mucous surface. Mucus could be pressed from it, as if it communicated with some sore. The child died.

Dr Thomson, Dalkeith, saw a case some years ago, where the tumour was quite transparent, and distended to the size of a bantam's egg. The bowels did not act, and yet the child was healthy. The convolutions of the intestines could easily be seen. The child became peevish. Mr Spence suggested carminative injections, after which the tumour collapsed; a pad was put on, the patient recovered, is still alive, and fifteen years of age.

Sir James Simpson had seen several such cases, but none recovered. He stated, however, that most cases of the common umbilical hernia of infancy got better during childhood without any treatment whatever. Time cured them; but the last truss, or other measure employed, got the credit of it.

II. REMARKS ON A NEW INSTRUMENT FOR FEEDING MANIACAL PATIENTS. BY DR THOMSON, DALKEITH.

Sir J. Y. Simpson considered nourishment an essential part of the treatment for maniacal patients, and he thought Dr Thomson's instrument valuable for that purpose, which he suggested might also be used in cases of putrid sore throat. He (Sir James) spoke of a gullet-feeding tube used by Dr Scott of Musselburgh, by which the patient could receive a good meal in one minute.

In answer to Dr Frazer, *Dr Thomson* said a little suffocating cough might follow the use of the nasal tube.

Dr Keiller urged a distinction between the treatment of acute and chronic mania. He therefore recommended Dr Thomson's tube in chronic cases; but in acute cases there might be some difficulty.

Dr Macdonald said that the use of the stomach-pump was not the serious operation Dr Thomson seemed to think.

III. NEW VACCINATING INSTRUMENT.

Sir J. Y. Simpson drew the attention of the Society to a new vaccinating instrument introduced into practice by Dr Milne of America. Dr M., who was present, showed the instrument; which, when used, makes one perforation of the skin, depositing at the same time the virus, which the instrument is previously supplied with, from a crust, which is always used in America, being preserved in tinfoil and covered with wax. The puncture (Dr M. said) was almost painless, and never bled.

Dr Sidey spoke strongly in favour of the use of the crust, which he had never found to fail in vaccination. He said that the crust must not be punctured, and must be allowed to fall off of itself. One crust would be sufficient for fifty children. He had vaccinated successfully with crusts which were upwards of twenty years old.

Dr Pridie said that Dr Kirk, of West Hartlepool, had successfully used the crust in vaccinating for many years.

IV. *Sir James Simpson* showed the Society a preparation in which several emboli, diagnosed during life, had become deposited in the pulmonary artery. The lady, who had heart disease, suddenly became pulseless soon after delivery. She had frequently fainted during some months previous to delivery. The labour was easy.

SESSION XXVI.—MEETING XV.

26*th June* 1867.—Sir JAMES Y. SIMPSON, Bart., *President*, in the Chair.

Dr Lilburne, R.N., Sheerness, was admitted as a Corresponding Fellow.

I. THE NEW TREATMENT OF DEFORMITIES PRODUCED BY MORBUS COXÆ. BY DR HINGSTON OF MONTREAL.

An interesting conversation followed this communication; *Dr Keiller* remarking that the simplicity of the treatment was great compared with our own. Mr Holmes, he said, had practised excision of the joint in some cases.

Dr Hingston said he had once seen the head of the femur come away spontaneously, by disjunctive ulceration.

II. OVARIOTOMY IN RUSSIA. BY PROF. ANTOINE DE KRASSOWSKI.

COMMUNICATED BY SIR JAMES SIMPSON.

This paper will appear in a future number.

III. CRANIOTOMY AND CEPHALOTRIPSY CONTRASTED, WITH A CASE OF EACH. BY DR MILNE.

This paper will appear in a future number of the Journal.

Sir James Simpson stated that Dr Milne was mistaken in the supposition that the base of the skull was broken in craniotomy. On the contrary, in cephalotripsy it certainly was broken.

Dr Keiller said that a smaller amount of material was removed even in the worst cases.

Dr Charles Bell said that the cephalotribe could not deliver in a pelvis less than two inches in diameter, and that the cæsarean section was necessary in such cases.

IV. *Sir James Simpson* showed a very long tangle bougie, like a male catheter, which he had used successfully for inducing premature labour. It was firm enough to allow of its introduction between the membranes of the uterus for 4 or 5 inches, and when lodged there, readily expanded under the moisture which it imbibed.

V. *Sir James Simpson* stated to the Society that he had lately excised two mammæ, using acupressure, and that in neither case was there one drop of pus seen, and both had completely healed,—a fact that could not be maintained, he believed, in all the surgical experience of the Edinburgh hospital.

SESSION XXVI.—MEETING XVI.

July 10, 1867.—Sir JAMES Y. SIMPSON, Bart., *President*, in the Chair.

Dr Spalding, Gorebridge, was admitted as an Ordinary Fellow.

Dr Hingston of Montreal was admitted as a Corresponding Fellow.

I. *Dr Cable* of Boston related some facts to the Society as to his experience of ovariotomy. He stated that he had had sixty cases in all. A long discussion followed on this and several matters of interest.

TWO CASES OF SPINA BIFIDA,

Born of the same mother, ten and a half months between each birth.

(*Read on 27th Feb., by Dr Menzies.*)

1866, *April* 9.—Mrs G. was delivered of a male child at the full period, having a large sacral spina bifida. This child lived six weeks, but died of convulsions and exhaustion. Sir James Y. Simpson kindly promised to see the child, but was unable to do so from indisposition.

1867, *Feb.* 21.—Mrs G. was again delivered this morning of a female child, supposed to be a fortnight before the full period, having a smaller sacral spina bifida than the former child. Remembering that Dr Henderson of Leith had related, at a meeting of the Obstetrical Society, a case of spina bifida, on which he had successfully operated, I asked him to see the child, as I thought it a favourable case for an operation. He and Sir James Simpson saw the child on the 22d, and agreed that the operation should be done next day at 12 noon. The operation was performed neatly and skilfully by Dr Henderson, in presence of Sir James Simpson, Dr Burn, Dr Cuthbert, and myself, and was done in the following manner:—A semilunar incision in the long axis of the tumour was made on each side of the mesial line, and an elliptical portion of the sac removed, leaving on each side only sufficient skin to form, when united, a covering for the opening into the spinal canal. The membrane lining the interior of these portions of the sac thus left was dissected off, and after all oozing of blood had ceased, the wound was closed by three wire sutures. The four posterior sacral nerves were firmly adherent to the sac, and required to be cut. Very little blood was lost during the operation. The tumour had ulcerated, and an escape of clear fluid was taking place from it before the operation, and the skin, for some distance around, appeared erythematous or slightly inflamed.

23*d*, 7 P.M.—Child sucking, and appeared easy; skin around the wound still slightly inflamed.

24*th*.—Still sucking; sutures removed; edges of wound adherent at top and bottom, but swollen and inflamed in central portion. Neighbouring skin still inflamed.

25*th*.—Was unable to suck after 2 this morning, and took a convulsion at 10 A.M., and had several during the day; but began to suck in the evening. Wound all open, and looking gray and sloughy.

26*th*.—Sucking a little; had no convulsions during the day, but they returned in the evening. Wound still looking unhealthy, and no appearance of granulations.

27*th*.—Unable to suck; convulsions almost constant; taking a little sack whey; no improvement in the appearance of the wound.

28*th*.—Frequent convulsions; swallows a little sack whey with difficulty; wound still of the same unhealthy condition.

March 1.—Unable to swallow; almost constant convulsions of a tetanic character, probably from inflammation spreading up the membranes of the cord. The convulsions to-day have been accompanied with screaming.

2*d*.—The child died this morning at 7 o'clock.

Part Fourth.

PERISCOPE.

MEDICINE.

PROFESSOR HEBRA, OF VIENNA, AGAINST THE USE OF COUNTER-IRRITANTS.

In an article published in the *Allg. Med. Ztg.* for 1862, No. 49, and reprinted in French, for presentation to the Paris International Medical Congress (*Sur l'Action des Révulsifs*), Professor Hebra declares his opposition to the use of counter-irritants (revulsives), which form so large a part of ordinary medical practice. He professes to show that the theory by which their use was originally suggested and is now maintained, is erroneous; and he brings forward clinical and experimental facts and arguments to demonstrate the evils which result from the practice. Physicians were, he maintains, led to adopt counter-irritants for the cure of internal diseases, by observing the alternations and apparent antagonism of cutaneous affections and internal lesions. When, for example, a patient, the subject of a skin disease (as psoriasis), was attacked by fever, the chronic cutaneous eruption was observed to fade and disappear while the febrile state lasted, but reappeared during convalescence. Again, in exanthematous fevers the febrile symptoms often subside on the appearance of the specific eruption; and, moreover, the eruption continues fully out only under a favourable condition of the internal affection; while, on the contrary, if the internal symptoms are aggravated, the cutaneous eruption diminishes, and, before a fatal issue, becomes altogether invisible. Hence the popular idea among physicians and the laity, that the suppression or metastasis of the cutaneous affection is the cause of the fatal issue of the general disease. But these opinions are erroneous, for the chronic skin disease does not vanish first, to be replaced by the fever; but, on the contrary, the dermatosis only begins to fade after a prolonged continuance of an intense febrile state. In like manner, in every general disease of great intensity and prolonged duration, the anæmia which supervenes is first noticed on the skin, and hence the fading and disappearance of red eruptions in these cases, since even syncope will cause their temporary vanishing. Another erroneous opinion, prevalent from ancient times till the present day, which probably lent support to the use of counter-irritants, was the idea that every disease consisted of something material, which attacked sometimes one part, sometimes another, and which it was the physician's chief aim to eliminate; hence the terms *materia peccans*, acrimonies of the blood, acids, phlegm, black and yellow bile, etc. These notions, in spite of modern pathology, still retain their influence on practice. It is, however, certain, that we cannot judge of the use of remedies on such grounds, but only by a knowledge of the action of the remedy on the healthy body on the one hand, and an acquaintance with the natural course of disease, uninfluenced by remedies, on the other. This was first stated by Gideon Harvey, in his work, "Ars Curandi Morbos Expectatione, Amstelodami, 1695," where he says boldly that "it would be proper to write on the patient's prescription only the word, *Expecta*." But this expectant method seemed a neglect too cruel to be practised in dangerous diseases, until Hahnemann showed that fevers and inflammations were often as successfully treated by decillionths as by the Hippocratic apparatus of venesections and counter-irritation; whereupon physicians and clinical professors, convinced of the real nothingness of decillionths, resorted to the treatment of febrile and non-febrile diseases by the pure expectant method, and were thus enabled to study accurately the natural course of disease. Wherever their results were as successful as the older heroic practice pursued "lege artis," it was obvious that the latter was at least unnecessary, that the cure was done by nature in spite of heroic remedies: "Natura et morbum et medicum vincit." Nevertheless, some practitioners, who admit all this in regard to certain diseases, plead for counter-irritants to the skin in the class of affections called *rheumatism*, believing that the peripheral irritation will relieve the deeper seated parts. But how often do these remedies, from simple rubefacients up to the "horrible invention of the moxa," fail; so that where cases improve, it is rather *during* than *by* the treatment. An impartial examination would show that as many rheumatic affections get well under homœopathy, hydropathy, electricity, or the plasters of quacks, as under counter-irritants.

Moreover, the excuse that it is necessary to do something to relieve suffering, and that blisters, etc., do no harm, is incorrect, as they often leave indelible marks on the skin, while hot and cold douches, lotions, liniments, and plasters do not, and yet afford as much relief. In diseases of the eye, also, the applications of leeches and blisters, which were formerly always used, are now condemned by many ophthalmologists. Clinical experiment in Hebra's practice gave similar evidence. Suppose on the thigh of a patient an eczema rubrum of the size of a crown-piece; place at two inches distance on one side a blister of the same size, on the opposite side a sinapism, and at the two other poles, tartar emetic ointment and croton oil. The artifical irritants will produce here bullæ and redness, there pustules and vesicles, but without at all diminishing the intensity of the central eczema. On the contrary, the latter often spreads to and includes the irritated surfaces, and becomes larger than before. Now, if in the same organ or tissue (the skin) a peripheral irritant cannot draw away and dispel a central affection of a similar kind, how can cutaneous irritation be expected to dissipate the morbid condition of the pleura, lungs, brain, peritonæum, eyes, sheaths of nerves, etc.? What new path do revulsives open up for the elimination of morbid products deposited in these cavities and organs? But cutaneous irritants, continues Prof. Hebra, are not only useless, but often do harm, and their pernicious effects may either last long, or even put life in peril. It is, for instance, a well-known fact that the exanthemata, smallpox, measles, and scarlet fever, are more fatal in proportion to the intensity and amount of the cutaneous eruption. And experience teaches that the eruption is more abundant on parts of skin where an irritation or dermatosis (*e.g.*, an eczema) previously existed. A sinapism, applied to the chest on account of dyspnœa, will cause a larger amount of pocks to appear there, and if there were a counter-irritant large enough to cover the entire integument, a simple varicella might be converted into a fatal variola. Indeed, even the irritation of cold water in excess, applied hydropathically around an eczema, will cause its extension over the whole skin; and often the abuse of acaricidal remedies, —*e.g.*, the sulphur fumigations in vogue a few years ago,—produces a horrible eczema over the whole external surface: often hot baths, pushed by some as an infallible remedy, diffuse instead of arresting a skin disease. The tartar emetic ointment, applied to the scalp in chronic hydrocephalus, causes no diminution of the effusion, while the pustular eruption is very painful, and may give rise to purulent absorption and erysipelas. A blister behind the ear is often the starting point of an eczema which affects the concha, the face, and hairy scalp, and which, under unsuitable treatment, may last for years, causing great pain, as Hebra has often seen, without improving an ophthalmia in the least. Leech bites on the temples are followed by incurable white trangular cicatrices, which certainly are no ornament to a pretty face. The marks of cupping, too, on the neck and arms of women, are often a serious disfiguration. Issues in the arm to prevent relapses of ophthalmia, or of cerebral congestions, or as derivatives from skin diseases, are not only useless for their intended purposes, but are very troublesome and frequently become the source of eczemas which spread over the surrounding integument. Even the discolorations which sinapisms leave behind, entail a lasting defect when applied to the neck or chest in females. Sometimes, indeed, a fatal result may be caused through the application of counter-irritants in typhoid fever, pneumonia, or smallpox, in consequence of the blistered surface being the seat of *cutaneous diphtheria.* The tinct. of arnica, introduced by homœopathists, if diluted, as they use it, is harmless; but if applied in a concentrated form, it causes redness and swelling of the skin, which in sensitive individuals developes into an eczema which spreads over a large surface and even the whole skin, and requires months to heal, confining the patient to bed for a longer period and in a worse condition than the affection would have done for which the arnica was administered. Many of these artificial skin eruptions, bullous, vesicular, and pustular, do not cease when the counter-irritant which caused them is removed, but last for weeks, months, or years. They can then no longer be distinguished from the idiopathic skin diseases, eczema, pemphigus, ecthyma, impetigo; and were the common theory true of the protective influence of counter-irritation, these skin diseases ought to afford a security against internal diseases in proportion to their amount. In that case, no persons should be healthier than the subjects of general chronic pemphigus, which should afford means of eliminating all kinds of peccant matters from the system. On the contrary, however, experience teaches that exudative eruptions covering large surfaces, especially in the form of vesicles, blebs, or pustules, not only exhibit no preservative power, but the reverse, exerting a disastrous influence on the general health, and becoming a frequent source of fatal issues. *Lazarus* was always regarded as a collection of all kinds of diseases, requiring providential intervention for his cure!—Veterinary art exhibited similar prejudices till a few years ago. Diseased animals, especially horses, used to be tortured with all kinds of cauteries and corrosives; and farriers were in repute with the ignorant in proportion to the cruelty of their treatment. But thanks to the heads of the medical department in the Veterinary Institute of Vienna, such practice is now obsolete there, and results equally satisfactory are now obtained by the expectant method as were formerly got by those cruel manœuvres. Veterinarians, in this respect, according to Hebra, might serve as a model for physicians. "It would be desirable," he says in conclusion, "that every physician, before applying a counter-irritant to his patient, should ask himself the question, whether, if he were ill, he would treat himself in the same way? Indeed, it has rarely happened to me to see physicians who would have subjected their own persons to the application of issues, moxas, and setons. Yet, let not the physician forget the commandment, 'Do not that to others which you would not have done to yourself,' when, at the bedside of his patient, he finds other remedies unavailing, and is tempted to have recourse to epispastics as his last resort. He ought always to remember that his mission is to relieve pain, and wherever his attempts to do so fail in spite of all his efforts, he can console himself with the assurance that he has at least caused no superfluous suffering."

[We have given above a pretty full abstract of Professor Hebra's objections to the use of counter-irritants, because the subject is one of great practical importance, and because the views he expresses, being in opposition to the ordinary practice, are fitted to arrest attention, as proceeding from an observer so eminent, so truthful, and so genial as the great dermatologist of Vienna. We regret that we cannot altogether agree with him. We disapprove, indeed, of the indiscriminate use of blisters, cauteries, and counter-irritants generally, and we have often regretted the disfiguration in females caused by the marks of leech bites, cupping, blisters, and setons, the remnants of a practice of former days. But to judge from Professor Hebra's remarks, the abuse of counter-irritation in Vienna must be much greater than is now usually seen in this country, where bleeding, blistering, and perturbative practice in general, have for several years been resorted to seldom, and with moderation. And, probably, as the Professor's practice in skin affections has given him extraordinary opportunities of witnessing the ill effects of former counter-irritants, he has been led somewhat to exaggerate their dangers; and, on the other hand, we scarcely think that he has had the same occasion to witness their beneficial action, both in medicine and surgery, where, in many cases, their use is followed by evident improvement. And is it proved that metastasis is a delusion? or that there is no *materia peccans* in disease? We think not. Humanity demands that remedies should be as painless as possible, provided they be effectual; but it is, above all, essential that they be effectual. A do-nothing practice cannot last: it is a transition period only: but close observers will perceive that modern medicine is passing beyond the stage of expectancy, which was necessary to found a natural history of disease, and that while the means employed will be fewer and simpler—often less heroic in appearance, but really more potent than the older therapeutics—they will be administered with immensely greater, because with scientific precision, and with almost certain benefit. But the problems of medicine require time and labour to be worked out, even with the abundant energy of a modern age; and till they are worked out, some amount of expectancy and of prudent empiricism is necessary, and is, even now, infinitely more successful than blind and rash routine or a random prescription of new remedies. Fortunately, in spite of erroneous current theories, judicious physicians have existed in all ages. Meanwhile, free questioning of remedies, in a proper scientific spirit, can only end by establishing what is excellent.]

DR S. WEIR MITCHELL ON COLD IN PHYSIOLOGICAL INVESTIGATIONS.

By the application of cold to various parts of the nervous centres, Dr Mitchell has succeeded in producing some curious results in pigeons and chickens. In a pigeon, for instance, whose cerebellum had been previously frozen many times, a jet of rhigolene was applied for one minute so as to chill both sides of *the neck*, at the level of the tenth cervical vertebra, just above the junction of the neck to the body. When released, he became at once the sport of violent general convulsions. They were very complete, and offered no other striking character for a few minutes; then there were occasional backward somersaults, or an effort in this direction. At the second minute the backward walking motion began to be seen, as the general spasms and somersaults ceased. Stupors also appeared, and alternated with the runnings backward, until within an hour the animal gradually recovered its usual health. Had these results, the doctor remarks, followed the chilling of the cerebellum, he should have been little surprised; but nothing in our previous knowledge of physiology led him to look for general convulsions or backward spasms from injury to the spine below the medulla oblongata. The experiment was repeated many times, always with the same results.

As the result of numerous trials, Dr Mitchell finds that at or about the fourteenth vertebra, counting from above downwards, we cease to notice the backward spasms and stupors on the application of cold, and see only signs of weakness or of tetanic rigidity in the legs. In a large chicken-cock, somewhat different movements were produced, after the bony spine had been exposed, and a jet of rhigolene thrown upon it for five minutes, at a point about three inches below the occiput. Released, he walked away without any signs of stupor or sickness. In a minute he stood still, as if confused. At the second minute he began to move backwards, rotating to the left, with long, slow, and strangely deliberate steps. The rotation seemed to be due to a feebleness of the left leg. He moved in a circle of about two feet in diameter, and now and then leaped into the air abruptly. His head was not thrown down as was always the case in the pigeons, and the action had none of the appearance of spasm which is presented in that bird. After five minutes' continuance of this most extraordinary motion, his steps became more awkward and irregular, as well as more rapid and spasmodic, but he now ceased to move in a circle. After twenty minutes the movements ceased. Dr Mitchell has failed entirely in his attempts to produce these fits in rabbits. These convulsions, he believes, depend upon palsy of the vessels which have been chilled by the cold.—*American Journal of Medical Sciences.*

PROFESSOR J. H. SALISBURY ON TWO NEWLY DISCOVERED SKIN DISEASES.

Dr Salisbury describes two new skin affections which are both cryptogamic and contagious, and capable of being transmitted from the animal to the human body. He names them *Trichosis felinis* and *Trichosis caninis.* The first originates in the cat, and is produced by a species of fungus that develops in the fermentation of cat's milk. It is readily transmissible to the human subject, and in infants and young children it spreads rapidly, attacking all parts of the body alike, but shows a preference for the hair follicles. The spores and filaments of this growth resemble those of *Trichosis furfuracea*, but develop themselves much more rapidly. The patches are slightly elevated above the surrounding surface, red, and covered with scales, and there is considerable irritation and itching of the parts. The best remedy is the tr. ferri chloridi, which should be painted thoroughly over the eruption, and a single application will most generally destroy completely the vegetation, and effect a cure.

Trichosis caninis affects dogs, and is characterized by an eruption, which begins by a small pustular elevation covered with epithelial scales; other little pustules appear around this, and beyond these others soon arise. Circular and oval patches are thus produced, and may extend over all parts of the animal. It resembles *Trichosis felinis*, but it has not yet been determined whether the two diseases may be produced by one and the same cause. *Trichosis caninis* is transmissible to the human subject, but is much less readily communicable than the first-mentioned disease. The same treatment is necessary for this as for *Trichosis felinis.—American Journal of Medical Sciences*, April 1867.

MATERIA MEDICA AND THERAPEUTICS.

By Thomas R. Fraser, M.D.

DIGITALIS IN RHEUMATIC FEVER.

An elaborate and practically valuable paper on the treatment of rheumatic fever by digitalis, has been recently communicated to the Imperial Academy of Medicine at Paris by Dr Oulmont of L'Hôpital Lariboisière. Twenty-four cases of rheumatic fever, and a few cases of pneumonia and of typhoid fever, were treated with this substance; but the important therapeutic deductions that are contained in the paper were derived from the first of these diseases only. As much as fifteen grains of digitalis powder, in the form of infusion, was given in the twenty-four hours, and continued at this rate until emesis was caused, when the quantity was reduced to such doses as could be tolerated by the stomach. Among the conclusions that Dr Oulmont arrives at are the following:—1. In acute rheumatism, digitalis, when given in the above doses, lowers the pulse by from 10 to 40 beats, in three or four days; 2. The diminution of the pulse-rate is accompanied with a fall in the temperature amounting to several degrees; 3. Digitalis causes a rapid and complete disappearance of the symptoms when the fever is unaccompanied with complication; 4. It appears to prevent those exocardial and endocardial complications that so commonly occur in this disease; 5. No cerebral symptoms occurred in any of the cases; 6. The excretions were unaffected: the abundant perspiration of rheumatic fever was neither increased nor diminished; and the urine was not modified in quantity or quality, digitalis failing to excite diuresis in this as in other febrile affections; 7. Digitalis has no action on the rheumatism proper—it acts only on the fever by lowering the pulse-rate and the temperature.

Dr Oulmont also discusses the *modus operandi* of digitalis on the circulation and temperature. He believes with Traube and Von Bezold, in opposition to Schiff and others, that the pneumogastric nerves possess the function of cardiac inhibition; and he adheres to the view of digitalis having a stimulating action on these nerves. But as such a cardiac action is insufficient to account for the effect on the temperature, Dr Oulmont feels inclined to express his concurrence in the opinion of an independent influence by digitalis on the vaso-motor nerves.—*Bulletin Génér. de Thérapeut.*, 8me Liv., 1867, p. 345.

THE TREATMENT OF INTESTINAL OBSTRUCTION BY ELECTRICITY.

SEVERAL instances of the application of electricity to the treatment of intestinal obstruction have been published within a few years, prominent among which is the remarkable and successful case of Dr Stokes that occurred in 1864. Dr Keyhel of Ghent now relates a case of a somewhat similar character, and also, happily, successful. A female of sixty-three years of age came under his charge, suffering from intestinal obstruction, which had existed for several days, and with symptoms of severe colic and great abdominal distention. No distinctly circumscribed region of tenderness could be found. The diagnosis was evidently intestinal paralysis, due probably to a nervous derangement. Ordinary purgatives, injections, and, afterwards, nux vomica powder to the amount of two grains in twenty-four hours were perseveringly administered, but without benefit. The patient's condition gradually became more critical; stercoraceous vomiting occurred, the pulse became very feeble and irregular, and death appeared imminent. It was now resolved to apply electricity. For this purpose a sound was introduced into the rectum, and to this one pole of "l'appareil portatif de Gaiffe" was attached; the other pole was connected with a moistened sponge applied to the abdomen. Electricity was in this way passed through a portion of the intestines for ten minutes. No immediate effect seems to have followed, and on the evening of the same day the treatment was repeated. The patient felt great relief after this second application; there was no further vomiting, and on the following morning a free evacuation occurred. The electric current was again applied that morning, and in the evening a second evacuation followed. This treatment was again repeated, and it again caused a free stool, ofter which the normal action of the bowels was renewed, and in a few days the patient was perfectly well.

In the case of Stokes, severe pain was caused by the electric current; and Keyhel mentions that, at any rate, during the first application in his case, a sensation of heat was experienced, with considerable pain that continued some time after the opening of the circuit. It seems to us that this objection—often in such cases a grave one—may be avoided by employing an electric current of feeble energy; and there can be no doubt that such a modification would be generally quite sufficient.—*Annales de la Société de Médecine de Gand*, and *Bull. Gén. de Thérap.*, 8me Liv., 1867.

ON CERTAIN APPLICATIONS OF ETHER-SPRAY.

M. **Horand** of Lyons is at present occupied in examining the therapeutic applications of ether-spray. He has employed it in several cases of neuralgia—as in neuralgia of the urethra and in gastralgia—and found that when it had produced blanching of the skin, pain of an acute and otherwise unalleviable character was invariably removed. But the effects were merely temporary, and the suffering always returned.

It is interesting, and probably of some importance to note his suggestion to apply ether-spray during depilation. M. Horand strongly urges this employment, and supports his recommendation by detailing the results of M. Gailleton's experience. During the local anæsthesia so produced, it is possible to depilate without pain in cases of favus, of sycosis, and of impetigo. It was found that blanching, which indicates the period of removed sensibility, could be readily caused in the skin of the head, cheek, and lips; only, it is advisable first to cut short the hair of these parts. The hair should be plucked out while the ether-spray is being projected on the part, and after the stage of blanching. No inflammation follows; but minute pustules appear at the points of depilation, as occurs without ether-spray. Further, it is rationally suggested that a destructive action may be exerted on the parasite, and thereby add to the value of this application.—*Journal de Méd. de Lyons*, Juin 1867.

BROMIDE OF POTASSIUM IN EPILEPSY.

M. **Namais** has communicated a note to the French Academy on the therapeutic employment of bromide of potassium in epilepsy. His experience confirms and extends the statements that first emanated from the Edinburgh School of the benefits of this method of treatment. Fifteen grains thrice daily was usually given by this physician; but on one occasion, so large a quantity as 220 grains was administered in twenty-four hours. By this, however, delirium and inability for movement were caused. The employment of the drug had therefore to be suspended; but during this suspension the epileptic fits became again frequent and severe, and only diminished on a return to this remedy in more moderate doses.—*Comptes Rendus*, 20 Mai 1867.

Recent investigations have shown that the paralytic symptoms of such an overdose as M. Namais administered are among the physiological effects of bromide of potassium. M. Laborde has made a most extensive series of experiments, from which he concludes that this substance has no special action on the encephalon, heart, muscles, or nerves; but that it mainly influences the spinal cord, and that by suspending its reflex function.—*Comptes Rendus*, 8th July 1867.

Eulenburg and Guttmann have also found that paralysis is the most prominent symptom of a large dose, and they agree with Laborde in ascribing this paralysis to an action on the spinal cord.—*Centralblatt*, 18th May 1867.

SURGERY.

REUNION OF PARTS SEPARATED FROM THE BODY.

A **dragoon**, chopping wood, cut off the distal phalanx of his fore-finger; the second phalanx was cut through, and the separated piece was attached only by a strip of skin five or six lines across. At the man's earnest request, M. Bédié put up the finger in a padded splint, uniting the separated portion by straps, and for four days kept it moistened with camphorated spirit and water; in fifteen days it was completely healed, and in three months the movements were perfect, and the man fit for all his duties.

A boy, aged 7, had his hand nearly severed by a circular saw. On the back of the hand, the saw had cut through all the metacarpal bones above their articular heads, the thumb, second and middle fingers hung down, skin, tendons, and bones were completely divided, even the palmar vessels were cut and bled furiously; only a flap of skin on the palmar surface remained. The fingers were replaced and bandaged, and cold irrigation used. Next day there was not much pain, but the bandages had slipped; so Dr Geoffroy, by harelip-pins and threads, succeeded in restoring position; cold-water cloths continued. In twenty-five days the cure was perfect, except some stiffness in the movements of abduction and adduction of the thumb, and a want of power in extending the fore-finger.

A joiner, æt. 27, got his left hand injured by a saw. Before Dr Bloch arrived (three-quarters of an hour after the injury), two of the fingers had been already removed, as they were almost detached, by the woman who was attending him; the third still hung on. The saw had cut the fore, middle, and ring fingers across the digito-palmar fold. The three bones were completely divided; two of the fingers separated, and the third hung only by a thin flap about a quarter of an inch broad. Little blood had been lost, and before the arrival of the surgeon bleeding had ceased. He got the two separated fingers, which had been thrown into a cistern, and without much hopes fastened them in their places; he then lashed the ring-finger to the little one. By the fourth day, it was evident that the fore and middle fingers were dead and decomposing; they had never recovered their heat, and had to be removed, yet some points of new adhesions had begun to form which required to be divided. Pain was extreme, and the suppuration very free, yet in five weeks the ring-finger had completely reunited. A splint of tin, hollowed into shape by a few strokes of a hammer, was found very useful. Dr Camus briefly records a fourth case, in which the end of the little finger in a boy of 14 was almost entirely cut off by being caught in a door. A dorsal flap of skin about a line in breadth was all that held it. It was kept in position by adhesive plasters, and in three weeks a cure was complete.—*Gazette des Hôpitaux*, March 2, 1867.

A peasant boy about six years old, cutting wood with a butcher's knife, let the blow fall perpendicularly on the back of all the fingers of his left hand. All four were nearly separated, a small palmar flap alone keeping them hanging loose. He was carried nearly three miles to the surgeon (M. David) with his hand wrapped in a handkerchief. An attempt was made to save them, and eventually it succeeded, the fingers being almost as useful as before the accident.—*Gazette des Hôpitaux*, March 7, 1867.

AMPUTATION OF THE LEG FOR ABSCESS OF THE OS CALCIS.

THAT such a discussion as the following is possible in the Imperial Society of Surgery of Paris, does not give a high idea of the conservative element in French Surgery.

Primitive Subperiosteal Abscess of the Os Calcis—Amputation of the Leg.

M. Verneuil showed the preparation.

M. Lefort.—The examination of the preparation which we are shown throws great doubts on the propriety of the operation which has been performed. It is true I have not seen the patient, but in such a case I should have made a large incision and attempted the resection of the os calcis, as a less severe operation than amputation of the leg.

M. Labbe.—I agree with M. Lefort. Amputation is not justifiable; it is only necessary to see the preparation to be convinced that the os calcis could have been easily removed. It is necessary, at the commencement of inflammations of this nature, to make free incisions.

M. Verneuil.—The examination of the preparation justifies the criticism of my two colleagues. At the bed-side of the patient I foresaw it all, but the difficulty of diagnosis was extreme. I made incisions as far as it was possible, for I am convinced of the usefulness of early incisions. I supposed the ankle-joint was diseased, *and that was my chief reason for amputation.*

M. Lefort.—In difficult cases, where the diagnosis is not certain by the use of chloroform, one may proceed from milder to severer measures. In this case I should have made all arrangements to cut out the os calcis, and if, in doing so, I had found the ankle-joint involved, I should then have amputated at the ankle-joint.—*Gazette des Hôpitaux* for March 16, 1867.

TRACHEOTOMY IN CROUP.

A COMMUNICATION was read to the Société Médicale des Hôpitaux (Paris) by M. Isambert on this interesting and important subject. The case was in an infant of sixteen months, and the operation was successful. He reports the case on account of the extreme rarity of successful cases at that age, and states that he is not aware of more than four cases in which tracheotomy has been performed successfully under the age of two years.

Of the cases cited in the paper and in the discussion which ensued, no case was recorded under thirteen months; and it was stated that no case even below two years had ever recovered from the operation in the public hospitals. M. Archambaud gave the results of his own practice. Sixty-five cases of tracheotomy, and of these twenty-two were successful. All agreed on the almost certain fatality of the operation in the comparatively rare cases of croup in adults. M. Roger quoted statistics to prove that the most favourable age is between seven and ten years; for while twenty-two to twenty-five per cent. only recover, taking all ages together, it is found that between thirty-two and thirty-three per cent. recover of those operated on between the ages of seven and ten.

Another very interesting paper on the same subject was read by M. Bourdillat (M. Bergeron's house-surgeon) on the results of sixteen tracheotomies for croup performed by him at the Hôpital Sainte-Eugénie, of which ten were successful. He also gives the statistics of the cases operated on at that hospital during the last seven years and a half. They reach the astounding number of 813, with 208 recoveries. The percentage of recoveries has been gradually improving, having risen in 1865–6–7 to 31, 35, and 40 per cent. respectively.

M. Baizeau, chief surgeon to the Military Hospital of Algiers, devotes a short paper to the subject of tracheotomy in infants below the age of two years. He gives two cases from his own practice in which children of ten and fifteen months respectively recovered; and strongly recommends that, in suitable cases, the youth of the patient should not be allowed to contra-indicate operation. The following list of the successful cases known to M. Baizeau may be quoted as including a case performed not many years ago in the Royal Infirmary of Edinburgh, and reported in the pages of this Journal:—

"M. Isambert has lately reported a case of recovery in an infant of sixteen months. M. Archambault one of thirteen and one of eighteen. M. Roger has reported the case of a little patient of nineteen months, also saved by tracheotomy. M. Vigla has had a recovery in a little boy of seventeen months. MM. Potain and Moutard-Martin have each operated with success on infants of eighteen months. I recall also the cures obtained by MM. Trousseau and Barthez on infants of thirteen months, and by Bell of Edinburgh in one of seven months. M. Sedillot operated on his own little girl at six weeks, but in her case there was doubt as to the disease being really croup. If tracheotomy does not offer the same chances of success in infants below two years as in those above that age, it cannot be contested that it does sometimes succeed. Let us hope that soon the facts cited will be no longer exceptions."—*Gazette des Hôpitaux*, 1867, *Nos.* 77, 83, 89, 100.

TRACHEOTOMY FOR CROUP, IMPOSSIBILITY OF REMOVING THE TUBE EVEN AFTER SIXTEEN MONTHS.

M. PARIS records a case, interesting from its rarity, which we give in an abridged form:—

"J. B., æt. 5¼ years, had a severe attack of croup in November 1865. For this M. Paris performed tracheotomy. Nothing was remarkable in the operation. Recovery was complete on the fourteenth day. On the thirty-second day, after many temporary removals, the canula was taken out, and the wound allowed to heal. Respiration gradually became so difficult, that in two days it had to be replaced. Other attempts were made at three and four months; still without success. The boy was taken to Paris, and seen by M. Trousseau, who stated he had met with several similar cases, one in which the canula had to be left for five years, and yet eventually a cure was completed. M. Marjolin confirmed this opinion. M. Ozanam made a laryngoscopic examination, but after twenty examinations, assisted by the little patient with good will and courage, could discover nothing, but that the larynx and vocal cords were healthy.

At the date of the report, sixteen months after the operation, the boy is healthy, but still wears the canula. During the day he closes it with a plug, which he has to take out at night. The curious point is, that though he can breathe quite well with the canula completely plugged, he cannot breathe when it is removed. Further attempts to remove it are to be made when summer has fully set in.—*Gazette des Hôpitaux*, 13th April 1867.

ENCYSTED HYDROCELE OF THE EPIDIDYMIS OR SPERMATIC HYDROCELE.

REPORTED BY M. PAUL DAUVÉ.

(*Only a brief resumé of the case given.*)

C., a gendarme, æt. 44, tall, powerful, and robust. Six years ago when riding, felt a violent pain in his left testicle, after some sudden movement of his horse. Six months afterwards, a tumour as large as a nut appeared close to the testicle, then remained stationary for two years; since which time it has gradually increased in size. It is not painful, only troublesome from its size. It now extends from the testicle to the external inguinal ring, and is a tumour five inches in its longest, and three in its transverse diameter. It possessed no character of a hernia, except its shape, and was translucent. One very remarkable and exceptional peculiarity, however, the patient described, viz., that the size of tumour diminished after coitus, and increased during continence, and that after a repetition of coitus several times in one night, the tumour entirely disappeared.

The tumour was tapped. The fluid evacuated was opalescent, and contained a quantity of spermatozoids, which, even seven hours after the operation, were very lively. It was then injected with a mixture of one part of tincture of iodine to two of water. Owing probably to the weakness of the injection, no effect was produced, and in eight days the tumour had attained its former size. It was again tapped, and this time no spermatozoids were found in the fluid, and again injected with a stronger mixture of forty-five parts of tincture of iodine to twenty of water. This time the cure was complete. The reporter rightly judges that this case is pathologically an interesting one, and makes the following observations on the change of volume dependent on continence or excess:—

"These changes certainly indicate a communication between the cyst and one of the efferent canals. The causation of this affection has always been a controverted point. Liston thought that the cyst was formed by the dilatation of an efferent duct,—an hypothesis which could hardly be maintained in the case of large cysts. Paget (Med. Chir. Transactions, vol. xxvii.) explained the presence of spermatozoids in certain cysts, by the influence of the neighbourhood (of the testicle) on secretion. Curling believes the presence of these animalcules to be due to the rupture of one of the tubes of the epididymis, and the consequent escape of the semen into the sac of the hydrocele.—(Diseases of the Testicle, p. 179.) M. Gosselin, on the other hand, thinks that the cyst is probably consecutive to the rupture of one of the efferent ducts, which permits certain drops of semen to escape, which drops, by their presence, induce the formation of a new membrane round them."

M. Dauvé believes the above case to be in favour of M. Gosselin's theory, and accounts for the diminution of the tumour after coitus, and its increase during continence, by the patency of the opening in the duct; while he explains the absence of spermatozoids on the recurrence of the tumour after the first injection by supposing that the injection had excited enough inflammation to close the opening.—*Gazette des Hôpitaux*, March 21, 1867.

SPONGE AS A HÆMOSTATIC.

UNDER this head several cases are recorded by M. H. Betbèze, House-surgeon to M. Demarquay at the Maison de Santé, in which sponge in small fragments, slightly moistened, proved useful as a hæmostatic. In an amputation of the neck of the uterus, in two cases of excision of the rectum for cancerous tumours, and some others, it seems to have answered very well. It is one of those means which are apt to pass out of use, and yet are valuable in certain cases, especially where hæmorrhage is occurring from a large surface, and yet from no special point, or in secondary hæmorrhage. It is safe, does not irritate, and can be got at any moment in almost any emergency.—*Gazette des Hôpitaux*, February 21, 1867.

DR LEAVITT ON THE PERMANGANATE OF POTASH IN THE TREATMENT OF CARBUNCLE.

THE beneficial effects accruing from the local use of the permanganate of potash in the treatment of sloughing ulcers, phlegmonous erysipelas, and hospital gangrene, having been most thoroughly tested and proved during the last year of the war, in army hospital life, it occurred to Dr Leavitt that its peculiar remedial qualities would alike prove successful in that most painful and distressing lesion, carbuncle, originating as it also does from a depressed vitality and a morbific condition of the blood. The most satisfactory and encouraging results have been obtained in the only cases in which he has had an opportunity to employ it. After making a small incision, a strong solution (ʒss. to ℥i.) is applied with a brush, and a dressing saturated with it, and covered with oiled silk, is applied. In a few hours pain subsides, and healthy pus begins to form, and the wound heals in a short time.—*American Journal of Medical Sciences*, January 1867.

Part Fifth.

MEDICAL NEWS.

ANCIENT PHYSICIANS—JOHN HALL.

AMONG the acquisitions of the Library of the Royal College of Physicians during recent years have been several ancient medical works of much rarity. These, although they may have been considered books of authority on the subjects upon which they treat at the time when they were published, are now only interesting to those who are curious in investigating the history of the medical art.

One of these volumes is a translation of a work originally written in Latin by John Hall (of which, singularly enough, the original MS. is now in the possession of a well-known physician of Edinburgh), and is entitled, "Select Observations on English Bodies of Eminent Persons in Desparate Diseases." This translation was made by James Cooke, and published in London in 1679. Hall was a physician at Stratford-on-Avon, and was married to Susanna, the favourite daughter of William Shakespeare. He practised at Stratford during the greater part of his life, and died there in 1635. In his singular book he gives the names of his patients, and a full account of the diseases with which they were afflicted. Several of the chief people of the time are mentioned among those who availed themselves of his medical skill, such as the Earl and Countess of

Northampton; the most illustrious lord, Lord William Compton, President of Wales; Talbot, the first-born of the Countess of Salisbury; the Lady Brown of Radford, etc. etc.; but the case of the poet Michael Drayton, and those of Mrs and Elizabeth Hall, his wife and daughter, are perhaps the most curious in the book.

Drayton, the poet, was one of the most distinguished literary characters of his time, and was author of the "Polyolbion," "The Baron's Wars," etc. He was the friend of Shakespeare, and there is a tradition that when, with Ben Jonson, he visited the great dramatist, Shakespeare's hospitality so overflowed that a fever supervened, which ran, in a short course, to a fatal termination. Drayton died in 1631, and was buried in the Poet's Corner of Westminster Abbey. Hall's 22d observation relates to an illness of his as follows:—"Mr Drayton, an excellent Poet, labouring of a Tertian, was cured by the following:—℞ The Emetic Infusion, ℥i. Syrup of Violets, a spoonful; mix them. This given, wrought very well both upwards and downwards."

Observation 19 relates to the daughter of Shakespeare, Mrs Hall, of whom it was recorded on her tombstone that she was "witty above her sex," and "wise to salvation." Hall quaintly remarks:—"Mrs Hall of Stratford, my wife, being miserably tormented with the cholick, was cured as followeth:—℞ Diaphaen. Diacatholic. ana ℥i., Pul. Holand ʒii., Ol. rutae ℥i., Lact. q. s. f. Clyst. This injected gave her two Stools, yet the Pain continued, being but little mitigated, therefore I appointed to inject a Pint of Sack made hot. This presently brought forth a great deal of Wind, and freed her from all pain."

Observation 36 relates to his only daughter, Elizabeth Hall, who was afflicted with "tortura oris" and "an erratick feaver." After being subjected successfully to the same energetic kind of treatment, the article concludes,—"Thus was she delivered from death and deadly diseases, and was well for many years. To God be praise." In Shakespeare's will—one of the very few of his personal writings that have come down to us, "all his plate, except his broad silver and gilt bowl, is left to his grand-daughter, Elizabeth Hall." This lady was afterwards married in 1626 to Thomas Nashe, Esq., afterwards to Sir John Barnard of Abingdon, Northamptonshire, but died without issue by either husband.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.

At a meeting of the College on the 16th October, the following office-bearers were elected for the ensuing year:—

President, James Spence. *Treasurer*, John Gairdner, M.D. *Librarian*, Archibald Inglis, M.D. *Secretary*, James Simson, M.D. *President's Council*—James S. Combe, M.D.; Andrew Wood, M.D.; James Dunsmure, M.D.; James D. Gillespie, M.D.; William Walker; Henry D. Littlejohn. *Ex-officio*, John Gairdner, M.D. *Examiners*—James Simson, M.D.; William Dumbreck, M.D.; Archibald Inglis, M.D.; Robert Omond, M.D.; James Dunsmure, M.D.; Peter D. Handyside, M.D.; James D. Gillespie, M.D.; H. D. Littlejohn, M.D.; Patrick H. Watson, M.D.; David Wilson, M.D.; John Smith, M.D.; D. M. C. L. Argyll Robertson, M.D. *Assessors to Examiners*—James S. Combe, M.D.; James Syme; William Brown; Adam Hunter, M.D. *Conservator of Museum*—William R. Sanders, M.D. *Officer*—John Dickie.

APPOINTMENTS.

The Queen has appointed Sir William Fergusson, Bart., to be one of Her Majesty's Sergeant-Surgeons in Ordinary, in room of the late Sir William Lawrence; also, Mr James Paget to be Sergeant-Surgeon Extraordinary to Her Majesty. Mr Hilton and Mr Prescott Hewett have also been appointed Surgeons Extraordinary to the Queen.

Dr Frederick W. A. Skae has been appointed Superintendent of the Stirling District Asylum.

GOODSIR FELLOWSHIP—SUBSCRIPTION LIST *continued.*

James Fowler, Esq., Cellardyke,	£2	2	0
Dr Archibald Hewan, Minera Street, London,	1	1	0
R. M. Smith, Esq., Bellevue Crescent,	5	0	0
H. Stephens, Esq., Redbraes Cottage, Bonnington Road,	3	0	0
Dr J. B. Nicoll, H.M.S. *Minotaur*,	1	1	0
Dr C. W. C. Madden-Medlicott, Wells,	1	1	0
Dr Roberts Thomson, Bournemouth,	1	1	0
Dr Burslem, Bournemouth,	2	2	0
Dr Smith, Weymouth,	3	3	0

Collected by Dr Ivor Murray (Local Secretary), *Hongkong:*—

Dr Ivor Murray, Colonial Surgeon,	$50			
Dr J. O. Henderson, Health Officer,	10			
Richard Young, Esq., L.R.C.P. and S. Ed.,	10			
Dr H. Kauffman, Kiel,	10			
Dr Zachariae, Kiel,	10			
Dr R. A. O'Brien, Dublin,	10			
Dr. J. E. Freeland, Glasgow,	10			
Dr William Kane, Dublin,	25			
Dr A. Cochran, Glasgow,	10			
Dr Frederick Hains, R.N., Edinburgh,	10			
Dr Robert Nelson, R.N.,	5			
Dr Robert Purves, R.N.,	10			
Dr G. B. Mouat, H.M. 73d Regiment,	5			
Dr G. K. Hardie, H.M. 73d Regiment,	5			
Dr Heffernan, Deputy Inspector of Hospitals,	10			
Dr W. S. Adams, Glasgow,	10			
	$200	= £42	14	2
Dr Thomas Anderson, Botanic Gardens, Calcutta,		10	0	0

PUBLICATIONS RECEIVED.

Samuel L. Abbot, M.D.,—Report to the International Sanitary Conference, on the Origin, etc., of Asiatic Cholera. Boston, 1867.

M'Call Anderson, M.D.,—Practical Treatise upon Eczema. London, 1867.

John Ashhurst, jun., M.D.,—Injuries of the Spine. Philadelphia, 1867.

Graily Hewitt, M.D.,—On Nutrition, etc. London, 1867.

Berkeley Hill, M.B.,—The Essentials of Bandaging. London, 1867.

F. E. Jencken, M.D.,—The Cholera. Lond., 1867.

Journal of the Royal Agricultural Society of England, No. 6. London, 1867.

Henry Mac Cormac, M.D.,—On Synthesis as taking Precedence of Analysis in Education. London, 1867.

William Allen Miller, M.D., LL.D.,—Practical Hints to the Medical Student. Lond., 1867.

C. H. Moore, F.R.C.S.—Rodent Cancer. London, 1867.

John Patterson, M.D.,—Egypt and the Nile. London, 1867.

Oliver Pemberton,—Clinical Illustrations of Cancer. London, 1867.

William Pirrie, M.D.,—On Hay Asthma. London, 1867.

Henry Power, F.R.C.S.,—Illustrations of Diseases of the Eye. London, 1867.

Publications of the Massachussetts Medical Society, Vol. II., No. 1, 1866,—Cerebro-Spinal Meningitis. Boston, 1867.

F. H. Ramsbotham, M.D.,—Obstetric Medicine and Surgery. London, 1867.

C. E. Reeves, M.D.,—Softening of the Stomach in Children. Melbourne, 1867.

James B. Russell, M.D.,—Report of the City of Glasgow Fever Hospital, 1866–1867. Glasgow, 1867.

St George's Hospital Reports, Vol. II., 1867.

Thomas Hawkes Tanner, M.D.,—On the Signs and Diseases of Pregnancy. Lond., 1867.

P. H. Watson, M.D.,—Excision of the Knee-joint. Edinburgh, 1867.

PERIODICALS RECEIVED.

Annales d'Oculistique,—July and August.
Berliner klin. Wochensch.,—Nos. 39 to 42.
Births, Deaths, and Marriages,—for Sept.
Brit. and For. Med.-Chir. Review,—Oct.
Brit. Med. Jour.,—Oct. 5 to 26.
Medical Press,—Oct. 2 to 30.
Gazette des Hôpitaux,—Nos. 112 to 125.
Gaz. Hebd. de Médecine, etc.,—Nos. 40 to 43.
Gazette Médicale de Paris,—Nos. 39 to 42.
Glasgow Medical Journal,—Oct.
Journal of Cutaneous Medicine,—Oct.
Journal of Mental Science,—Oct.
Med. Times and Gazette,—Oct. 5 to 26.
New York Medical Journal,—August.
Ophthalmic Review,—October.
Rev. de Thérapeutique Médico-Chirurgicale,—Nos. 19 and 20.
Virchow's Archiv,—September.
Wochenblatt der Zeitschrift der Aerzte in Wien,—Nos. 30 to 36.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Introductory Address delivered at Surgeons' Hall, Edinburgh, at the Opening of the Medical Session, November* 1867. By T. GRAINGER STEWART, M.D., F.R.C.P., F.R.S.E., Lecturer on Pathology.

GENTLEMEN,—When we examine some of the lower forms of the animal kingdom, we find all the vital functions performed by one and the same structure. Each part of the organism can fulfil any of the simple functions which the exigencies of the individual require. With the same structure it feels, it moves about, it seizes its food, it absorbs. That portion which has been its outer covering becomes folded in, as occasion requires, to form a stomach; and when its work in that capacity has been accomplished, it again opens up, and the insoluble remnants are discharged. There is no differentiation of structure and function, no adaptation of structure for particular work. But when we advance to higher forms, we find that such differentiations do exist. Appropriate organs are set apart for particular functions. The animal moves, breathes, feels, sees, hears, prehends, digests, excretes by distinct structures, specially adapted for each of their functions, and each one fitted for one only. And the higher we advance in the animal series, the more marked does this become. Thus the special powers of the individual parts of the organism are increased, while the sum of the powers of each is diminished.

We find the same principle exemplified in communities. In the simplest social condition there is no separation of office, no setting apart of individuals for particular work. Each rudely performs for himself all the simple duties of life. Each man does all that his neighbour does, grows or kills and prepares his own food, fights for himself, clothes himself. But as civilization advances, all this becomes changed. Individuals devote themselves to particular occupations. They do certain work for the community, and in return, more or less directly, get other work done for them. It might be interesting to inquire in what order the different occupations came to be developed. This would probably differ according to circumstances; but we find the type of it all in the old Mosaic record—that Jabal became the father of such as dwell in tents and have cattle, and his brother Jubal, of such as handle the harp and organ. Whatever the order may be, it is very certain that as civilization advances separation of trades becomes more marked, and they even become subdivided.

Take as an example of this what we see in our own profession. The country doctor is called upon to act in all departments of professional duty. He is at once physician, surgeon, and accoucheur; he is oculist, aurist, dentist; he knows the diseases of children and of old age, and the maladies peculiar to women. He has to manage difficult and anxious cases of mental alienation; has to act for the Crown in medico-legal matters, and sometimes is officer of public health. And, gentlemen, let me say that it is wonderful, considering their variety, with what skill all these functions are in general performed. Take, on the other hand, the state of the profession in the great centres of civilization. Each department has there its special cultivator. Each of the branches I have mentioned, and many besides, are practised as specialties, and thus the profession is greatly subdivided. This arrangement is of course beneficial, for the specialist has almost of necessity special skill in his own department, and has good opportunity of contributing to the advancement of knowledge regarding it; but, as a rule, their general professional acquirements do not equal those of the country doctor.

Thus, gentlemen, you see how in communities, as in the animal series, a gradual differentiation of work takes place.

This consideration may, in some degree, help us to realize the relative duties which the individual members of a community owe to one another, and, in particular, may be useful to us as enabling us to perceive what we as medical men undertake; and as we would not have those who work for us do it ignorantly or carelessly, so must we thoroughly prepare ourselves for what we have to do, and being thoroughly prepared, do it.

It is not my purpose here even to glance at many of the departments of human labour; but it is well that, in any of them, work well done earns a noble reward.

There are, however, four departments which stand out prominently from the rest, which are worthy of special notice, and may suffice as examples of the whole. There is first, a class whose office it is to defend the community; secondly, one whose aim it is to maintain justice between the different members of the community; thirdly, one which cares for the health of the bodies and minds of the members; and, lastly, one devoted to the highest interests—the relationship of the members of the community with God. Now these professions of Arms, Law, Medicine, and Divinity, are in their nature noble, and in their exercise well fitted to inspire with enthusiasm any generous mind. Although our work is the very opposite of his, we can all sympathize with the ardour of the soldier, stimulated alike by love of country and the memory of the achievements of those who have gone before him. Who can fail to enter into the feelings of self-forgetful devotion with which he is ready, when occasion requires, to march

"To the death for his native land!"

And let me say a word for the profession of Law, which I think scarcely holds the place in public estimation to which it is entitled. This arises, doubtless, partly from the delays which appear invariably to attend its administration, partly from the great difficulty which is often experienced in arriving at a just conclusion, and diversity of opinions and decisions which necessarily flow from this; and not a little from the fact that in all litigations, one, and in many both parties, are dissatisfied with the result; but, gentlemen, when rightly fulfilled, the Law is a god-like profession, for it is devoted to the maintenance of justice between man and man. Few, again, can fail to recognise the nobility of the clergyman's office. Careful students of men, seeing them closely at the crises of life, when conventionality breaks down and the real nature stands revealed, thus versed in the mysterious workings of the human spirit, and, on the other hand, walking closely with God, they strive to make their own experience helpful to their fellow-men, to instruct them in the divine word, and to lead them to a higher life. Of the profession of Medicine I must speak more in detail, for it is that with which we have specially to do; but first, let me say, that as you would not have the soldier neglect his preparations or fail in his duty in the day of battle—as you would not have the lawyer neglect your case or disregard the interest of his client—as you would not have the clergyman carelessly and indifferently trifle with the sacred interests intrusted to him—so must you, as medical men, prepare yourselves thoroughly, and honestly and laboriously perform your work.

And now let us look more minutely into the nature of the duties undertaken by the members of our profession. These duties seem to me divisible into four departments—viz., protection from disease, the cure of disease, the relief of suffering, and the affording satisfaction to the minds of the patient and his friends.

Protection I have placed first, as it is at once our noblest prerogative and most productive field of effort. It presupposes a knowledge of the causes and laws of disease, for unless we know them, how can we ward it off? Now, these causes are of two kinds—external and internal—the external operating from without, the internal from within the system. Every malady arises from a combination of both these causes, while in different instances the proportion of the two elements varies. Protection thus naturally divides itself into two classes—viz., the warding off injurious influences in the surroundings of man, and the combating the morbific tendencies of man himself. The former is the special department of those intrusted with the public health, in which, however, every medical man ought intelligently to participate. The latter is in the domain of the family doctor.

In the former of these departments splendid triumphs have already been achieved. Diseases once prevalent and fatal have been made to disappear, while others which still linger among us have been deprived of their virulence. These results have been effected, in some cases, by eradication of the cause; in others, by the discovery of special prophylactics; in others, again, by the adoption of measures which prevent the propagation of the malady. A hundred years ago agues were common in this country; now they are scarcely known, their causes having been eradicated. By means of vaccination there are saved every year, in the United Kingdom alone, between 80,000 and 90,000 lives. In the end of the last century, the deaths from smallpox annually were 3000 in every 1,000,000 of the population; the mortality is now under 200, and even that number is diminishing year by year. As an example of the results of attempts to prevent the propagation of maladies, I may mention the fact that, notwithstanding its immense trade, and the constant influx of immigrants from all quarters of the world, the colony of Victoria has never been visited by smallpox. The laws which regulate the propagation of this disease being well ascertained, and an efficient quarantine having been established, the disease, although it has often reached the coast, has never been allowed to establish itself on land. Once only, by the dishonest misrepresentations of the captain and surgeon of a ship, a case was smuggled through, and one individual affected with it landed. From him about twenty caught the infection. The authorities then interfered; all the affected were isolated in an inland quarantine establishment, and not another individual took the disease. From that time till 1864, and so far as I know to the present moment, not a single case has occurred. Among the recent achievements in the way of protection from danger, it seems to me that the introduction of carbolic acid as a dressing for surgical wounds is entitled to take a high place. The evidence with regard to it is not yet by any means complete, but experience appears to prove its value.

Remarkable as these achievements are, I do not doubt that equal triumphs yet lie before us. Other causes may be uprooted, other diseases may be prevented by prophylactics, a more efficient guarding of our coasts, and more complete isolation of those affected with contagious diseases at home, may diminish our mortality to an extent which we can now scarcely conceive.

The best means for obtaining this desirable result is a careful investigation of the morbific agents which are occasionally present in the three great surroundings of men—viz., the atmosphere we breathe, the fluids we drink, and the food we eat (if the two latter may be called, for convenience sake, by this name). Morbific conditions of the atmosphere, whether originating in itself, emanating from the soil, resulting from chemical or vital changes in plants or vegetable matter, from the products of human industry, from excessive accumulation or chemical alteration of natural human emanations, or from pathological processes—all these we shall, doubtless, on ascertaining their nature or source, be able to prevent or remove. Morbific conditions of water and other fluids, and of food, if once ascertained, might probably also, in many cases, be eradicated.

I doubt if the value of quarantine and isolation of those suffering from infectious diseases are sufficiently appreciated among us. The single fact I have just mentioned should impress upon you its value on the large scale, but another instance may better show how much may be effected by judicious arrangement in limited outbreaks. A ship sailed from China for Melbourne with 500 unvaccinated Chinamen on board. An Englishman, who had secured a passage, took smallpox a few days after they had set sail; and although he was ill all the time he was on board—at least thirty days—by carefully keeping him isolated, no other case occurred. What was done on board that vessel might be done among us at home, and thereby many outbreaks of contagious diseases might be prevented. Instead of patients being allowed to go about and sow the fatal germs everywhere, they might be separated, and the spread of the malady arrested. I was lately informed, on high authority, that a woman had been seen selling sweets to children in Glasgow, while a smallpox rash was distinctly visible in her face and hands. Surely such a case indicates the desirability of compulsory isolation.

Another question as to protection from disease has lately been mooted by an eminent medical authority—viz., Ought we to protect our patients from hospitals? in other words, is the mortality in hospitals relatively greater than that from corresponding diseases in corresponding classes of the community beyond their walls? The question is of much importance, and deserves thorough sifting; and I hope, ere long, to contribute something to this end in regard to our own city. In any inquiry we must, of course, distinguish four classes of hospitals—viz., Maternity, Surgical, Fever, and Medical; and satisfy ourselves as to the merits of each of them independently. We must also distinguish between accidental and preventable, and essential or unavoidable disadvantages. It appears from M. Lefort's statistics that the results of maternity hospitals are eminently unsatisfactory. It were premature, with the data before us, to pronounce as to the other kinds of hospitals, but I trust that, ere long, the subject will be looked into, and abundant facts supplied.

The protection which lies within the province of the family doctor, though less obviously important, is also well worthy of notice. The skilful medical man, well acquainted with the constitution of his patients, can, by careful management, fortify them in their weak points; and, warning them of danger, induce them to avoid influences which, though innocuous to others, might be hurtful to them. To help patients in the selection of residence, in the regulation of education, in the choice of profession, to watch for and combat the first insidious beginnings of constitutional disease, are, I think, among the noblest offices of the physician.

Cure of disease is the second of the departments of professional work. This must always be our aim when disease has become established. You will find that it is accomplished in two ways or by two methods—viz., mechanically, by the employment of mechanical appliances, and vitally, by the administration of agents which modify the vital processes of the organism. When the former class of agencies can be employed, as is commonly the case in Surgery and Obstetrics, and to a more limited extent in Medicine, the results are often obvious and speedy. Whereas with the latter, our results are less certain and striking, and often more tardy in their manifestations. This is mainly in consequence of the exceedingly complicated character of the processes of life, and of the difficulty which we experience in influencing them. As an example of cure by mechanical means, the ordinary treatment of a fracture may be mentioned, of cure by vital agencies, that of ague or of periodic neuralgia by quinine; of convulsions by chloroform, or, to take a slower instance, of inflammatory Bright's disease by diuretics.

But, gentlemen, if in the field of prevention much remains to be done, there is very much also in that of cure. It is comparatively little that we can do in this, but we have already accomplished so much that we are warranted in confidently expecting, one day, to attain to much greater discoveries.

Relief of suffering is in the individual case of less value than cure of disease, but it is much more widely applicable. It is effected by the same two classes of agents—viz., mechanical and vital. Of the former class, we may select, as examples, paracentesis abdominis, which so often relieves pain in hopeless cases; or that invaluable instrument, the catheter, by which so much suffering is obviated: of the latter, the vital, we may mention sedatives in painful diseases and in operations.

To afford satisfaction to the minds of the patient and his friends is the last of our four departments. Many a time you will find yourselves, in practice, questioned with profound anxiety as to the nature of an ailment and its probable result, and to your questioner your verdict is of an importance that you can only know when you, in turn, occupy his position, and make the same inquiries as to one you love. Be your opinion favourable or unfavourable, it is, for the most part, welcomed, as dispelling fear or letting the worst be known. Depend upon it, gentlemen, that if cure, or even relief, were out of our power, the whole science of Medicine would be worth maintaining for the sake of diagnosis and prognosis alone; or, as we have expressed it, for the satisfaction of our patients and their friends.

Such are the very important duties which, in adopting the profession of Medicine, you undertake to perform in the community. I shall not refer in detail to higher and nobler offices still which our profession gives us opportunity of fulfilling, but I cannot pass them over in silence. I would, indeed, commend them to your most earnest consideration as at once a sacred duty and a lofty privilege.

Such being, in outline, the work which you propose to undertake in your future lives, it is all-important for you now to ascertain how you are to fit yourselves for it.

Looking forward from the position which you now occupy, I would have you recognise three points which may be kept specially in view—three points which may be likened to successive eminences rising above one another. The nearest of these is the examination—a point of no little importance, but which often usurps too prominent a place in the minds of students. I can scarcely wonder, indeed, that as one approaches this ridge, it should shut out from view the more lofty eminences which lie beyond. But I would warn you against confining your attention too closely to it. Remember that there are more important heights to scale beyond it, and that honest, steady work, though not particularly intense, will carry you through your examinations easily, provided you do not indulge your taste for certain departments to the neglect of others. On the other hand, you must remember that your examinations require earnest work. It is true that some men struggle through after a hasty grinding process, but attempting to pass with such a preparation as that affords is at best uncertain and is always unsatisfactory. Even if, by a dexterous concealment of ignorance and show of knowledge, you do elude the examiners, you will discover that you have only surmounted one difficulty to find yourselves at the foot of another ascent much more arduous, and in which your conduct concerns not yourselves merely, but others. I would, therefore, have you keep in view, even now, the second ridge, that of competence for, and—its consequence—success in practice. It is true that, in practice also, some succeed after a quackish fashion, without competent knowledge, but their success is at best precarious and insecure; for, conscious that they do not understand the cases they treat, they uneasily grope their way along, constantly exposed to the risk of being found out by intelligent patients. Remember, then, that, in order to success, you must aim at making yourselves competent practitioners. But I would have you raise your eyes to the third ridge, which, though less obvious, towers far above the other two—viz., the honest, efficient performance of the work you undertake in the community. Happily a recognition of this, and steady working with our eyes set on it, renders comparatively easy the passage of the other heights, and ennobles the whole life-work.

In order to a satisfactory fulfilment of the office of the medical practitioner, it is essential that we thoroughly master many departments of knowledge. You are assembled here for the purpose of entering on or pursuing these studies, and I desire to explain to you how they may, in my opinion, be best conducted. Tracing down from the completed edifice to the foundation, we shall see how the different branches of knowledge stand related to one another. Professional work is commonly divided into the three departments, Medicine, Surgery, and Obstetrics. In special courses of instruction, you have the opportunity of becoming acquainted with each of these. In order, however, to a competent knowledge of them, we must be acquainted with pathology, the science which treats of the nature of disease, and with therapeutics, that which treats of the nature and action of remedies. Now, on the one hand, pathology,—including, as it does, morbid anatomy, the structural changes induced by or constituting disease, and pathology proper, the abnormalities of function connected therewith,—demands a previous acquaintance with normal anatomy, the healthy structure of the body, and physiology, its normal functions. Therapeutics, on the other hand,—including, as it does, the appearance and character of the different articles of the materia medica, and the actions they produce on the body,—renders desirable a knowledge of botany, and demands a study of chemistry, and, in so far, also of physiology. But chemistry you will find is also essential to a knowledge of physiology and pathology, and still more of another department—viz., medical jurisprudence, which treats of the application of our professional knowledge to legal questions and to questions of public health. Look with me more in detail, for a little, at each of the departments to which we have thus referred, and let us take them in the reverse order—the order in which you study them—that is, from the foundation upwards.

I shall not refer to the preliminary branches which are now so properly required by the examining boards, but shall pass at once to the professional departments.

Botany, although not entitled to a foremost place, is, if rightly taught and understood, very valuable to the medical student. The anatomy and physiology of plants throw light upon the corresponding departments of the animal kingdom; and a knowledge of systematic botany,—of the different classes of plants, of their general characters, habitats, actions, and uses,—is very useful in the study of therapeutics, and, under exceptional circumstances, may prove of special practical value. But apart from all these considerations, botany is of importance as a simple, and, to most minds, an agreeable observational science. It affords an excellent opportunity for the cultivation of the faculty of observation, which is so essential to the medical practitioner. But I have no word of praise for that kind of botany which consists merely in burdening the memory with long and useless names. It is the botany of the field and garden, rather than of the lecture-room, that I would commend. Other departments of natural history are well worthy of study, and may be commended to students who have time and opportunity for their investigation.

Chemistry is of great importance in relation to therapeutics, as affording an intelligent appreciation of the nature of drugs, of the suitable combinations, of the changes they undergo in the system, of the modes of counteracting them when taken in injurious quantity or form; in relation to medical jurisprudence in the detection of poisoning and other crimes; in relation to physiology and pathology, and through them to practical Medicine and Surgery, affording important information as to the nature of the changes which are taking place in the body in health and disease, both in its structure and its secretions, and many indications for diagnosis and treatment. Surely, gentlemen, a science which can yield so much is worthy of assiduous cultivation. To become an accomplished chemist requires almost the labour of a lifetime, and it is not to be expected that the ordinary medical student can do more than attain to a general knowledge of it; but its principles should be understood by all, and the more complete your knowledge of details, the better.

For the study of chemistry you will find three separate courses: one of systematic lectures, one of practical, and one of analytical instruction. The two former are required by the boards, and should be carefully attended by all. The latter I would commend to those who have leisure, and who desire really to excel in the department.

Anatomy is the essential foundation alike of Medicine, Surgery, and Midwifery. It includes the naked eye and microscopic appearances of the different parts and structures. It is taught by means of systematic lectures, demonstrations, and dissections. I beg you to avail yourselves most earnestly of the opportunities thus afforded. Do not expect that the subject is to be easily mastered, or, having been mastered, is to be easily retained; but by diligence you will find that, after a time, it is easy, and when you come to connect it with practical points, you will find it more memorable. Always, when you are working at dry details of what seems to you useless information, bear in mind that it will have its uses, and that it will some day stand you in good stead. Look forward to the practical application. Above all things, be careful in your dissections. Be sure that you see the structures which you find described in your books. Dissect thoughtfully and never hastily, and you will find delight not merely in the acquisition of knowledge, and in the use you hope one day to make of it, but in the recognition of the marvellous beauty of the arrangements by which the functions of the economy are subserved.

Physiology, the science which treats of the functions of the body, ranks alongside of anatomy in importance, and before it in interest. This science is advancing with astonishing rapidity, and each discovery is bearing practical fruit. It is but a few years since Sir Charles Bell demonstrated that sensory and motor nerve fibres are distinct, and what wonders have been accomplished since then!

Marshall Hall has taught of reflex action; John Reid, of the functions of the eighth pair of nerves; Claude Bernard, of the sympathetic; and Brown-Sequard, of the spinal chord; and each of them has immensely contributed to the advance, not only of the science, but of the art of Medicine. Surely such a department of study will at once delight and benefit you.

Pathology properly includes morbid anatomy and morbid physiology. The former branch of the subject I would specially commend to your notice, for if it be neglected during student days, you will find the loss irreparable. When engaged in practice you may learn many things which you discover you have neglected, but morbid anatomy you never can study except in connexion with a great hospital. You should therefore attend diligently at the post-mortem theatre. But the benefit to be derived from such attendance is comparatively slight, unless you have systematically studied the subject. You may go to the theatre, hear the specimens named, see their general features pointed out, and yet find it "stale, flat, and unprofitable." But when you have learned to understand the value of the lesions, every dissection becomes replete with interest, and you are prepared intelligently to compare the pathological conditions in every case with its clinical history. I should greatly like to see this study carried out more fully than it yet is in this school. I should like to see every student acquainted with morbid histology, in order that he might thereby more clearly apprehend the real nature of the structural changes. Morbid functions you will find partly taught in the classes of pathology, and partly in those of Medicine and Surgery. Its importance is so obvious that I need not enlarge upon it.

Materia Medica and Therapeutics includes a study of the nature, action, and uses of the different articles of the pharmacopœia, and deserve the most careful attention. In this study I would advise you to work as much as possible with the specimens before you, as you may do in the museum of my colleague here, or of the Royal Medical Society; and very specially I would recommend a more zealous use of the opportunities afforded by the practical pharmacy departments of the dispensaries, or of the druggists' shops in which you may be seeking experience.

Beyond these there arise the practical, or directly practical subjects. Those which we have considered constituting the science, we now turn to those which treat of the art of Medicine.

Surgery and Practice of Medicine are taught systematically and clinically. By the one plan the whole series of diseases are discussed in succession; by the other, individual cases are selected from those under observation in the hospital, and are made the subjects of careful comment. I would not underrate the value of systematic lectures, but I believe it is almost impossible to overrate clinical instruction. Under careful and judicious surgeons and physicians, you have opportunity of acquainting yourselves with the features and management of disease, and thereby you acquire more information in a few months than years of reading could confer. All of you should aim at dresserships and clerkships. They bring you into personal contact with patients on the one hand, and with your teachers on the other, and render doubly valuable clinical instruction.

Among other means of acquiring practical experience, I would recommend dispensary practice. It brings you into contact with other phases of diseases than those met with in hospitals—phases which, however, approach more nearly to those occurring in general practice. In that way you study also under special advantages, seeing that at any time you can call in as consultant the medical man under whom you are acting, and from whom you may ascertain the nature of your patient's complaint, and the appropriate treatment. Most earnestly I beg you to make sure of understanding your cases. Do not acquire a habit of slurring them over in an unsatisfactory manner. To ascertain their nature fully you will find arduous at first, but after a time it becomes easy, and is alike pleasant to you and profitable to your patients.

Obstetrics also must be studied, not merely theoretically and systematically, but clinically. Make good use of the opportunities of gaining experience which our medical charities afford. Strive to make yourselves thoroughly masters of this department, for it is the best means of introducing you to practice.

Medical Jurisprudence must be studied systematically, and deserves your closest attention; but here, also, I would impress upon you the value of practical work. You should embrace every opportunity of witnessing and taking part in post-mortem examinations; and you should learn to draw up formal reports, so that, when some day you are called upon to conduct a professional inquiry, you may not be at a loss, nor be ignorant of the precautions which you ought to take, and of the form in which your report should be drawn up. Study this, so far as possible, practically.

Besides these great departments, there are other subjects which deserve special attention. In the ordinary surgical wards you may acquire a competent knowledge of all departments of Surgery, excepting that of the eye. I would therefore advise you to attend the *eye wards*, and, if possible, also one of the eye dispensaries. I would also recommend careful attendance at the wards devoted to the *diseases peculiar to women*, in order that you may become practically acquainted with that important class of maladies.

Mental alienation should be studied by all medical men, and you will act very unwisely if you do not avail yourselves of the opportunities here afforded you of making yourselves acquainted with it.

Diseases of Children also require special notice; for you will find in practice that much of your time is devoted to them, and that in their diagnosis you require a special skill, and in their treatment a special promptitude and a calmness, beyond what is needed in the management of cases in the adult. The Royal Hospital for Sick

Children affords you ample opportunities of making yourselves acquainted with these affections. Attendance there is not required by any of the examining boards as yet, but you are made welcome to visit the hospital, and you will find that, on certain days, careful clinical visits are made, and the cases explained. Master the diseases of children, and you will secure a very important aid to success in practice.

From this hasty sketch of the work which lies before you, you will perceive that the information to be acquired is great and varied; indeed, if it were necessary to study only from books and lectures, I believe it would be impossible for you to acquire it all. But when they are studied practically, when you have to learn the characters and properties of objects, which you may handle and examine for yourselves, the difficulty is greatly diminished. Practical work renders the acquisition of knowledge easy, and at the same time confers a definiteness on our conceptions. How vague are our notions of the geography of a country which we have never visited, how easily are its features remembered if we have even once travelled through it. So it is with professional work. Merely to read descriptions of structures or of diseases is most purposeless; but to see things for ourselves, and to handle them, gives us an impression which is not easily effaced. I well remember my first attempt to conceive of a vertebra from Quain's description of it, and of the ease with which its main features were impressed on my mind when I had an opportunity of examining and handling it for myself. What amount of description could enable us to conceive of the rash of scarlatina or of measles? Yet how readily are their characters impressed upon us, and how readily are they recognised if they have once been seen. I would urge upon you most earnestly to take advantage of all opportunities for practical work. But remember, gentlemen, that in it, as in reading, there are two very different ways of working. You may spend hours in reading, but unless you reflect upon and turn over in your minds what you have been reading, your reading will be in vain; and you may be outwardly a diligent practical student, much in the dissecting-room, the laboratory, and the hospital, yet you will learn little unless you observe and carefully consider the objects presented to your attention. Try so to economize your time that you shall have leisure in the evening to think over the work you have done, and the facts and ideas you have acquired during the day.

There is one other point to which I wish for a moment to refer—viz., the *tutorial system*. This system, if rightly applied, is of inestimable value both to students and teachers. Until lately, it was, perhaps, in some degree neglected in Scotland; it has now, however, come into general use, but perhaps, in some cases, it has been introduced somewhat unwisely. There dwelt in England a man whose proportions were such as to render his life a burden to him. He was, in fact, the Mr Banting of his day. Resolving, like his illustrious successor, to diminish his bulk, he devised a kind of pudding, on which he fed with the happiest results. The fame of this pudding spread, and it came into general use among those who were similarly burdened, but it did them little good, because they simply superadded it to their ordinary diet. This, I fear, has been to some extent the case with the tutorial system in Scotland. We had a superabundance of lectures. The student's time was already too much occupied with formal discussion. The tutorial system was introduced, but was superadded to that already in existence. Saturdays, which should be devoted to rest or to recreation, which is a better rest, were demanded also. The Friday evenings, which had formerly been spent in the instructive and delightful halls of the medical societies, were required for grinding purposes; and so, on the whole, perhaps matters were made worse than before. A lecture hour each week should, if possible, be devoted to examination. This is done in many classes, and in all with marked advantage.

Having indicated the field of labour which lies before you, I need scarcely tell you of the necessity there is for diligence; but I will say a word of its reward. Master your profession thoroughly, and you will gain for yourselves esteem and affection; success in practice will almost certainly be yours; you may attain to positions of usefulness such as are enjoyed by the members of no other profession. Some men are born with powers which specially fit them for the work of the physician or surgeon, but happily this is not necessary. Any man may, by diligence, make himself a competent practitioner. None of you, who himself wishes, need despair of success, or even eminence. Poets are born, not made; no amount of diligence could convert a Tupper into a Tennyson; but it is not so with doctors. The man who, like Astley Cooper, knows at first sight what it is best to do for a surgical injury, could never be great without laborious study; and the man who stands before his first case abjectly helpless, may, by diligence and perseverance, make himself in the end a reliable and ready practitioner—nay, may even become rich in resources. Of course this could not be the case if professional success demanded the highest mental endowments, if we expected as much of the ordinary doctor as we do of the poets who sing to us. Doctors who will command the attention of the world cannot be made by mere diligence. We cannot hope, by such means, to raise among us another Goodsir; but for the everyday work of the profession, noble as it is, such as I have endeavoured to explain to you, honest diligence will procure the fitness.

Ere I close this lecture I must remind you that, but for an unlooked-for event, another of your teachers would have occupied this place; other thoughts would have been brought before you; another voice would have spoken words of counsel and cheer. Death, as it seems to us too soon, has deprived us of one whom we deeply esteemed as a colleague, whom you valued as a teacher. Death has not broken the ranks of lecturers here since a teacher of Surgery, Richard Mackenzie, died after too arduous labour on the field of the Alma. Under different circumstances, less interesting to the public, but not less noble in our estimation, died Dr Scoresby Jackson. Well aware of the risk he incurred from the delicacy of his constitution, he day by day exposed himself unflinchingly, in the discharge of professional duty, to dangers from which the boldest are apt to shrink, and in the discharge of these duties he fell. He died at the age of thirty-five, but not before he had earned a wide reputation. He graduated in 1857, and after two years spent abroad, returned to practice in Edinburgh. He was appointed lecturer on Materia Medica here in 1862, and in 1865 became physician to the Infirmary. He was the author of three excellent works: a Biography of his uncle, Dr Scoresby, a book on Medical Climatology, and a Note-book on Materia Medica. The last is or will soon be familiar to you all, the others you will find well worthy of perusal. He was also a contributor to the "Transactions of the Royal Society," and to the medical periodicals; and it was peculiarly sad to notice that, on the morning on which he died, two papers from his pen were published in the "Edinburgh Medical Journal." Of the many activities of his life I cannot speak, but let me say that he was untiring in his efforts for your benefit. He was warmly interested in the Medical Students' Christian Association, and a zealous upholder of medical missions. His character may be expressed in two words, which constitute almost the highest praise of which our language is capable,—he was a Christian and a gentleman.

I would have you learn from his career how much may be accomplished in a short lifetime by earnest work; but there is another lesson of deeper importance which it is fitted to impress upon all. Each of us is, in a sense, living two lives. There is the outward life of work, of effort, of achievement, of failure—the life seen of men; but there is also a hidden life—that of denying self and serving God, or of serving self and denying God—a life unseen by the mass, and perhaps little known even to our companions, but well known of God. While sedulous with the outer life, Dr Scoresby Jackson was ever watchful of the inner also; and worthy of admiration as was the one, still more admirable was the other. And though the outer life, abruptly ending in the midst of promise, might be fitly symbolized by a broken column, the inner, as we think of its completeness and its symmetry can be expressed only by the finished, perfect, pointed obelisk.

Gentlemen, I have already detained you longer than I could have wished, but the importance of the subjects must serve as my apology. One word in closing. Now, in the morning of life, as the shadows are long before you, and you look forward with joy and cheerful anticipation, live, I implore you, so that, when the evening comes, and the shadows are long behind you, you may be able to look back without regret, and forward with a brighter hope. Let your motto be—"*οὗ εἰμὶ ὧ καὶ λατρεύω*"—"whose I am and whom I serve;" and you will find that you have solved the problem and difficulties of your calling, and discovered the true philosophy of life.

ARTICLE II.—*On Polypus Uteri.* By ROBERT DYCE, M.D., F.R.S.E., Professor of Midwifery, University of Aberdeen, etc.

THE following record of forty cases of polypus uteri, which have occurred in my practice during the last few years, may perhaps merit a place in the *Journal.* All of them have been successfully removed, and the patients restored to perfect health in a very few days. I have only met with two varieties of tumour, viz., the purely fibrous, and the fibro-cellular or vesicular; but by far the greater number were of the former or fibrous variety, only a very few were of the latter or vesicular form. The fibrous were uniformly hard, more or less globular, smooth, and insensible; the fibro-cellular were less regular in shape, only partially firm, but still insensible to the touch. In size they have varied remarkably, from that of a walnut to that of a child's head, and even larger, the more ordinary size that of a large orange. In two cases their size required a midwifery forceps for their extraction; and in one case the perinæum was ruptured where no forceps were used. The place of attachment has been generally from the fundus, or some part of the cervix uteri; if from this latter, more often from its posterior part; the smaller generally from the lip, or very near it, but as often from one lip as the other. Generally there was a manifest stem or stalk, but some of the larger were sessile, springing from a large surface, and adhering throughout to the wall of the uterus. All the large intra-uterine were sessile. The vaginal had more or less of a stem, yet it was often very large.

With the exception of four cases, they were single tumours. In the exceptions, two had two tumours removed at one time, a third at an interval of twelve months, and the fourth case had a perfect quarry—one large tumour being removed in 1856, two in 1859, one in 1862, and five in 1863. The smallest of these quite equalled a small hen's egg.

The symptoms were very uniform, and the history nearly alike in all, viz., increased catamenia at first, then hæmorrhage to a greater or less extent, with leucorrhœal discharge, and at length the health gave way, and all the consequences of so continuous a drain upon the system followed, viz., prostration, anæmia, and dropsical effusions; and these effects were often irrespective of the size of the tumour, for I have seen often more blood lost, and greater prostration and disturbance to the constitution from tumours not larger than a pigeon's egg, than from one weighing some pounds. The diagnosis of the extra-uterine, or those which had passed either partially or wholly into the vagina, was very clear and easy. They were uniformly insensible when pricked or scratched; and any tumour found in the vagina possessing this character, proceeding from where it might, and with a history such as I have mentioned, was submitted to treatment for its removal with the uniform result of the patient's speedy restoration to perfect health. With regard to intra-uterine tumours, the diagnosis was less easy, as there was not the same tactile evidence for a guide; still, if any case of uterine hæmorrhage resisted the ordinary means of subduing hæmorrhage, it was at once submitted to the test of the uterine sound and sponge, or tangle tents, so as to produce dilatation of the os uteri—methods indispensable in all cases of this description—and the result was the discovery of an intra-uterine tumour. I need scarcely urge the necessity of making a vaginal examination in all cases of prolonged hæmorrhage from the uterus or vagina, and thus, as happened to myself some years ago, save a valuable life. I was met by a distinguished surgeon just as he came out of the house of his patient. He said he had been visiting a poor woman dying from excessive hæmorrhage from the womb, which he could not restrain, and asked me to see her. I detected a large polypus, which I tied the next day at his request. She soon regained her strength, and has been well ever since. He had never examined her.

In the foregoing case the tumour was palpable to the touch, therefore was easily recognised; but when the tumour is intra-uterine, it requires some tact to recognise it. Much will depend upon the amount of education the finger of the examiner has received; for what may be very sensible to one, may not be detected by another; besides this, firm pressure must be maintained above the pubes, so as to press the uterus down into the pelvis—the patient at the time lying on her back, and the knees drawn up and expanded. The mode of removal was various, any single method, in my experience, is not suited to all, though, in by far the greater number of cases, simple excision will supersede every other method; but in some cases it is not necessary, as in the smaller sort arising from the lip of the uterus; and in the larger and sessile, springing from a large surface in its interior, it is quite ineligible. The danger attending this plan—viz., hæmorrhage—has been much exaggerated, as I never saw in a case of purely fibrous tumour, whatever its size may have been, such an amount of blood lost as even to require plugging the vagina, though I make it a rule always to do so for a few hours. But in the cellular variety the circumstances are very different; they are much more vascular, whatever be their size, and have, in every one of my cases, been accompanied with such profuse hæmorrhage at the moment of removal as to require immediate attention.

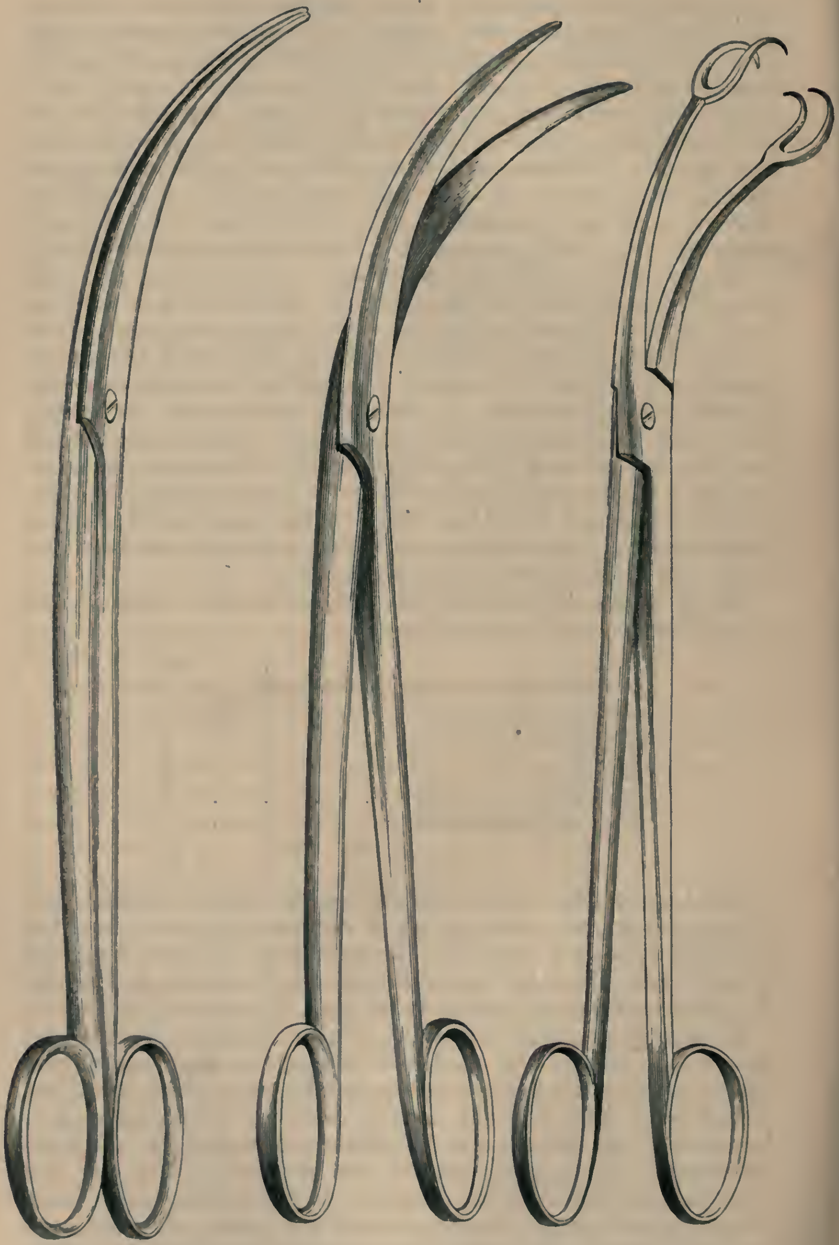
This circumstance, however, has not prevented my pursuing the same treatment, if the tumour was otherwise suitable for excision, as I found that *the ordinary* tampon, well applied for twenty-four hours, has removed all risk, and should in every case be used. Before I had made plugging a part of the operation, I nearly lost a patient from this cause. My friend Dr Kilgour had asked me to remove a polypus of this description (fibro-cellular). The operation was speedily performed, and though followed by but a moderate oozing,—more than usual, however,—we did not deem it of sufficient moment to resort to plugging, and had left the house. We were soon, however, hastily summoned. We found the bed soaked with blood; the patient had fainted more than once; and, just as I arrived, she had a violent convulsion (anæmic). By the help of pouring down her throat brandy *ad libitum*, when she was conscious, and the use of a firm plug, she gradually rallied; and though her convalescence was tedious, she regained at length perfect health, and now remains well. This is the only case, out of the many I have treated, where such an amount of blood was lost as to cause anxiety; it was also my first case of fibro-cellular variety. Generally, there is scarcely a table-spoonful lost; still, as the tampon causes no pain, is easily introduced, and at once removes every possible risk, I would recommend its application in every variety of polypus for a few hours, when it has been removed by excision.

The following table exhibits the various methods employed, and the number removed by each plan :—

Excision, ...	18
Excision with enucleation (double origin,) .	1
Ligature alone, ...	9
Ligature with excision, ...	3
Torsion, ...	4
Enucleation, ...	3
Ergot alone, ...	1
Ergot with sponge tents, ...	1
	40

The instruments used for excision were a strong vulsellum, and equally strong curved scissors, which cut principally from near the point, which latter is rounded. The scissors are 10 inches long, and slightly bent; the vulsellum of the same size, but nearly straight. The distance from the handles to the joint, in both, is 7 inches.

For ligature, the double straight canula of Neisson, improved by Gooch and Levret, was used, and latterly an improvement was added, by which the ligature was passed around a winch, and thus more readily tightened; the material used was strong whip-cord. I once used wire, intending to cut off the tumour at once, but it did not succeed, although the process was shortened. The cord was tightened morning and evening, and the vagina syringed at the same time with tepid water. Usually in from four to seven days the neck was cut through. I never but once saw any constitutional symptoms follow, but the length of time required, and especially the care



Vulsellum and Scissors for Excision of Polypus; one-third less in size than original.

requisite to prevent injury by the patient impaling herself, and the consequent necessity of keeping her on the side during the period of its application, induced me to substitute the scissors in all my future cases.

For torsion, the vulsellum was alone sufficient; and it is far preferable to two fingers, which some recommend, because once a sufficient hold is obtained, a few turns will readily separate the tumour.

For enucleation, a scratch with the finger-nail has generally answered, and once begun, it is easily completed, provided the tumour is within reach. The rent made in the investing membrane while fixing the vulsellum, is another and ready spot for this purpose, but sometimes a slight snip with the scissors may be required. The vulsellum is here indispensable, both for dragging down the tumour as well as fixing it. This mode of operating is so speedy and so bloodless, that I always now first attempt enucleation; but, in my experience, there are very few tumours so loosely invested as to admit of this mode of operating; still I think it should always be tried.

My first case was accidental. The tumour was very large, and partly intra-uterine. I excised what I believed to be the neck, as it allowed of its descent to some extent, but it was found to have another and broader attachment higher up within the uterus, with a bridge of strong fibrous tissue between the two attachments. With the first incision of this second attachment, my finger entered a vacuity formed by the tumour and its investing membrane; from this point the separation was cautiously made, and the mass was easily and quickly removed. This part of the tumour was fully larger than a turkey's egg.

The mode of using ergot will be best understood by a detail of the cases in which it was employed. The principle which first led me to employ it was, that, believing, as I do, that during every severe uterine pain in labour the circulation through the vessels of the uterus by which the placenta is supplied is entirely arrested, it occurred to me that if I could first create uterine contraction, and then continue this contraction for a length of time *continuously*, I would arrest the circulation for such a length of time as to prevent the tumour receiving sufficient or any nourishment; that the consequence would be the death of some part of the tumour; and that, once it had begun, it would go on dying and decomposing, and thus eventually the whole mass be brought away. It is on this principle of continuous action that ergot destroys the life of the child in labour, for so long as there are intermissions of ease, I never saw danger from it, but so sure as the pains are constant and without any intermission, the child will die, unless immediately born. It is from the same cause that, in impetuous labour, called "tetanic," where *no* ergot is given, children are lost, the too long-continued action preventing circulation between fœtus and mother, and hence due arëation of the blood for its life and nourishment. This theory I acted on, and succeeded in removing from two patients a tumour of enormous size, in a very few days, which filled the whole uterus, and distended the abdomen to a size far larger than that of a woman at the full time of pregnancy.

I conclude with detailing a few cases illustrative of the various methods adopted.

Polypus uteri removed by ligature, showing the danger of passing the ligature too high, thus including a portion of the uterus.

Elizabeth Ad—s, aged 42, unmarried, came under my care Nov. 10, 1853. Is exsanguined, weak, and unable to make the least exertion without fainting. Only a few months before her admission into the Infirmary she was examined per vaginum.

On examination, the finger comes immediately in contact with a large round, smooth, and insensible tumour, protruding through the os uteri, which is very much dilated and thin. From the small vagina its attachment can with great difficulty be reached; but by the help of some relaxation, produced by chloroform, it was ascertained to be adherent below, about two inches within the cervix at its anterior aspect, but the extent of adhesion could not be reached above—the tumour seeming to have no neck, and to spring from a broad base. On the 14th, a vulsellum was firmly fixed high up on the vaginal portion, and a strain made upon it, but without producing any sensible change. A ligature with Gooch's double canula was, with great difficulty, passed over the tumour. Immediately on its being tightened, she complained of more than usual pain, with a feeling of sinking and faintness; but as there had been so much difficulty in encircling the tumour, it was allowed to remain. She passed a restless night, with frequent attacks of faintness and sickness, with continued pain. The ligature, however, was tightened, the vagina syringed with tepid water, and an anodyne given. The tightening of the ligature daily, with the frequent washing the vagina to remove the putrid discharge, was continued for five days. The constitutional irritation, however, had now become so alarming, attended with exhaustion, loathing of food, great thirst, and rapid pulse, that, fearing a fatal result, the ligature was removed, and she was ordered strong beef tea, with brandy and wine. The following day, though still faint and low, she had not been sick, had less uneasiness, and had taken a good deal of the stimulants. The tumour was much diminished, and the discharge continued profuse. On the second day after, or seventh from the application of the ligature, while at stool, the remains of the tumour, as large as the closed fist, came away in a putrid state. From this time she gradually recovered, though her convalescence was much retarded by an attack of diarrhœa.

This case affords an instructive lesson. In my anxiety to encircle the whole mass, which was sessile, I had included a portion of the uterine wall in the ligature, no doubt by the weight of the tumour inverting a portion of the uterus. This seemed evident from the severity of the pain, and feeling of faintness immediately induced when the ligature was tightened.

I should have removed it at once and fixed it lower down, as the success of the operation would still have been secured, without endangering the life of my patient. The late Dr Wm. Hunter lost more than one patient by including a portion of the uterus in the ligature, which he ascertained by examination after death; and Gooch is very strong on this point, and expressly says that we are not to be anxious to include all the stalk, as he found it sufficient to get over the body of the tumour to insure the success of the operation; that the stalk will drop off in a few days, like the umbilical cord in a child, or be decomposed and pass away in the discharges. And I have found, in more than one instance, that even though there is no neck or stalk to the tumour, but growing from a broad base, that if the ligature can be made to include but the greater part of the tumour, the remaining portion will, in a few days, slough away, and a cure be effected. The next case illustrates this.

Large Polypus removed by Ligature, a portion of which had only been included in the Ligature.

Isabella W——, an unmarried farm servant, aged 45, was admitted into the Infirmary, 24th March 1856, with an enormous tumour distending the vagina, and pressing out the perinæum, as in the last stage of labour. From its size, it was impossible to pass the finger over the tumour, or to reach the os uteri. Above the pubes a well-defined tumour was felt, and pressure on the vaginal tumour was communicated to that felt in the abdomen. She has been losing blood in more or less quantity for upwards of two years, and though for some time under treatment, had never been examined until a few days ago. The symptoms, both constitutional and mechanical, were very urgent and distressing. Seldom could any urine be passed without the use of a long flexible catheter, and the pushing up the tumour, nor could the rectum be emptied without injections. Two days after her admission, a ligature was passed around what was supposed to be the bulk of the tumour, with more ease than was anticipated, by Gooch's double canula; but on tightening it again the same evening, the ligature broke. There had been no pain from the operation; no hæmorrhage, but complete retention of urine, and some little manipulation was required to reach the bladder by the catheter. On renewing the strangulation two days after, considerably more difficulty was experienced, from the tumour having swollen, consequent upon the first tying; it was not hence possible to include so much of it in the ligature. The ligature was tightened morning and evening, and tepid water thrown up the vagina each time. On the third day from this second attempt, the discharge became copious, brown, and fœtid—proofs of its decomposition. From this time all uneasiness passed away, she no longer required the catheter, and the bowels acted of themselves. On the ninth day, finding by examination that the os could be distinctly traced, with the adherent tumour passing within the cervix, it was determined to excise what remained, but by slight traction at the canula, and some pinching by the finger, the whole came away.

The tumour was now greatly reduced in size, and much resembled an hour-glass in shape; the central narrow part, which was about equidistant from both ends, was tightly encircled by the ligature. The fœtid discharge continued for a few days; and she was discharged cured in the third week from her admission.

Polypus uteri removed by Ligature and Excision.

Elizabeth T——, unmarried, aged 47, housemaid, full habit of body, but extremely sallow in complexion from loss of blood, was admitted 7th March 1854, with the ordinary history and symptoms of polypus uteri of two and a half years' duration. The tumour is of considerable size, round, smooth, and insensible, filling up the vagina, and descending to within an inch of the external orifice. The vagina is relaxed, hence the finger can be easily passed around the tumour, and its neck felt passing within the os and cervix, to the latter of which it is attached at its back part fully two inches within. On the twelfth, chloroform was administered, which produced great relaxation of the vagina. The vulsellum, when fixed, brought the tumour still nearer the perinæum, so that the ligature was easily passed over it and tightened; when, finding that the peduncle was small (not thicker than two fingers), it was at once excised above the ligature, and the mass brought away: not a table-spoonful of blood was lost. The tampon was used for twelve hours. The tumour was as large as an ordinary orange. No bad symptom followed, and she was discharged on the 20th, cured.

With the experience I now have, this tumour might have been at once excised. By the vulsellum it was brought quite to the perinæum, thus enabling the neck to be entirely embraced by the finger.

Polypus uteri removed by Torsion.

Two cases were in connexion with pregnancy, and no doubt both of them had been the cause of abortion.

Mrs S——, mother of four children, miscarried at the fourth month, with not more than the ordinary loss of blood. The discharge had ceased, and the patient was on the sofa on the fourth day. A few days after, while dressing, she was alarmed by rather a copious discharge of blood from the vagina. She got sick and faint, but without the slightest pain. By the time I saw her she had recovered, having taken some brandy, and applied cold cloths to the abdomen. On a careful examination, nothing could be detected. The os was open, but barely admitted the point of the finger; nor did the uterus appear larger than it ought at this period of its involution. She was therefore kept in bed, and directed to continue the wet applications, and to avoid stimulants and animal food. These means were adopted lest the cause of the hæmorrhage should be the presence of another ovum in utero. It could be no part of the aborted ovum, because the whole mass, fœtus, placenta, and decidua came off "entire." For the next ten days the bloody discharge, though very moderate, was nearly continuous. Tinct. cannabis gtt.xv. every four hours was first tried, then ergot in 5 gr. doses every three hours. By these means occasional uneasiness, then regular pains in her back, were produced. On examining now, the os was found more open, so as easily to admit the finger, and a smooth something was felt pressing through it. A vulsellum was cautiously carried along the finger through the os, and the tumour grasped. Torsion was made, and a firm polypus, the size of a walnut, was removed in a few seconds: from that moment the hæmorrhage ceased.

A second case occurred shortly after, in August 1858, under similar circumstances. The patient, Mrs W——, had borne three children, and now had miscarried between the fifth and sixth month. The child cried, but soon died. The loss of blood was not more than usual, and had nearly ceased, but in a few days it returned with some violence, and, notwithstanding the ordinary means, it continued to recur at intervals for several weeks. For some reason she would not permit an examination until the exhaustion and prostration made it imperative. At this time I was asked to see her along with Dr Ogston, whose patient she was. The os was found open, so as freely to admit the point of the finger, but nothing could at first be detected; at length, by firmly pushing down the uterus from the abdomen, something was felt to touch the tip of the finger. A vulsellum was cautiously guided within the uterus on to the tumour, and with difficulty grasped. Finding no pain produced, the instrument was more firmly pressed and twisted. In a few seconds the tumour was brought away; it was firm and cartilaginous, and fully equalled a walnut. The hæmorrhage ceased from that moment, and in due time she menstruated.

In this case it required very strong pressure above the pubes to bring the tumour within reach of the finger, so as to be felt, and no less care in carrying the vulsellum so far within the uterus, over so small a tumour, so as to avoid injuring the uterus itself. The safe method in all cases, whatever be the size of the tumour, is to press the closed vulsellum or forceps (but I prefer the former) gently and steadily up on to the tumour, and allow the instrument to expand of itself as it embraces the tumour, and not to attempt to grasp or try its hold until a sufficiency is within the blades, which can be judged of by the expansion of the handle; because once fixed, there it should remain. If this is not attended to, from the limited space and the almost impossibility of liberating both blades to get another hold, it becomes very embarrassing.

Polypus uteri (two) removed by Excision.

Christian M'Q——, aged 43, married, came in from Turriff in September 1861. I removed a large polypus by excision from this patient seven years before, since which, until four or five months ago, she has remained well. A polypus was now detected partly within and partly outside the uterus. The os was very much dilated, but it could be traced all round; it was pulled down by the vulsellum and excised. A second was felt, but could just be touched by the tip of the finger; it was brought down by the same means and excised. Each tumour fully equalled a hen's egg. The vagina was plugged for twenty-four hours. She returned home on the ninth day.

Polypus removed by Excision.

Mrs W—— was sent in by Dr Fettes of Laurencekirk in May 1865. She had been losing blood between three and four years at intervals, and latterly it had never ceased draining away. I removed a polypus the following day by excision; it sprang from the posterior part of the cervix, and was partly through the os, which was greatly dilated. It was perfectly globular, larger than an orange, and with a gristly stalk as thick as a thumb. No blood followed; no plug was used; and she went home on the third day, a distance of forty miles by train.

Large Polypus removed by Excision.

Miss W——, aged 34. I saw this lady with Dr Fiddes first in February 1863, again in June 1864, and lastly in August 1866, when the tumour was excised. Previous to my first visit in 1863, she had occasionally profuse catamenia, often mixed with coagula, and general derangement of her health, and attended with frequent and lengthened attacks of pain in the region of the uterus, preventing sleep at night, and rendering her very miserable during the day. This necessitated the use of anodynes, which still further deranged her stomach. Per vaginam the uterus was felt enlarged at the fore part, but the os was close and otherwise natural. Externally, several hard nodules were felt on deep pressure above the pubes, which were tender on pressure. Various means were tried, and for a time she seemed to improve, but this amendment was but temporary. These changes continued to recur again and again: they always left her less able to bear the succeeding attack.

Examinations were occasionally made to ascertain the changes that might be taking place, as we were satisfied that one or more large fibrous growths occupied the cavity of the uterus. At length, in August 1866, the os had begun to expand, the cervix was thinner, and the tumour was felt pressing through the os. Along with this there was more severe pain, and constant discharge of blood. In a few days more the tumour had forced its way considerably through the os, and now distended the vagina. The patient was greatly exhausted, emaciated, without appetite, frequently sick, and passing sleepless nights, and with a rapid and feeble pulse; immediate relief was therefore imperative by its removal. The fixing of the vulsellum and the excising of the peduncle were not attended with so much difficulty as was expected, as the peduncle was found not at the top, but some way down on the side of the tumour, and was, besides, very small. There was, however, great difficulty in getting the tumour through the external parts. A midwifery forceps was sent for, but I succeeded, before they were brought, by forcibly squeezing the vulsellum, which had a very firm hold, and using a see-saw motion, and bringing the tumour up towards the pubes, just as when the head is about to be born. Unfortunately a slight rupture of the perinæum took place on its escape; no hæmorrhage followed; the plug was used for twelve hours, and she made a capital recovery. I saw this patient two months ago, rosy and fat, and menstruating regularly. The tumour was as large as a child's head, nodulated, which accounted for the belief of several tumours existing when examined through the abdominal walls.

A still larger tumour I removed about three years ago by excision.

Margaret B—— aged 36, a large-made woman, 14th July 1864. The distention of the vagina and size of the tumour were so great that there was no possibility of carrying the finger any distance over the tumour, and the pressure upon and thinning of the perinæum made it questionable whether it ought not to be divided before attempting the removal of the tumour. Instead of doing this, having fixed the vulsellum, I determined to cut off as much as was within reach; thus, by freeing the vagina at first, I expected that the remaining portion would be more easily reached. But I was agreeably surprised to find, after a very few incisions had been made, that the tumour could be turned round and round in any direction. This arose, as in the last case, from the peduncle being low down in front, and which had been cut amongst my earlier incisions. No amount of traction could bring the tumour through the external parts. Incision of the perinæum was suggested, but I preferred the ordinary midwifery forceps. These were applied, and by pressing the handles closely, so as to compress and elongate the tumour, extraction was made as in an ordinary forceps case. No untoward symptom followed. She went home in a week to the parish of Leslie, and has continued well. The day before she left the remains of the peduncle came away, not much decomposed. It was thicker than two fingers, and fully three inches long. *Tumour weighed* 16 ounces.

Ann F——, cook-maid, aged 45, May 1863. I was called to this patient in great haste by the lady in whose service she was, in consequence of her fainting from loss of blood while pursuing her avocations in the kitchen. Suspicions of pregnancy, suggested by the family, induced me to examine her per vaginam at once. The presence of a large tumour dispelled this suspicion. I cut it off the following day; it was as large as a billiard-ball, and adhered to the back part of the cervix by a long stalk. She was at work in ten days.

The following case was of much interest, from the frequent recurrence of the disease, with the success attending the different methods of treatment adopted on each attack.

Case of Recurrent Polypus removed by Excision. Ergot and Enucleation.

Mrs W——, aged 33, corpulent, but flabby, with pale complexion. I first saw this patient in June 1856, along with the late Dr Steel, whose patient she was. She had been losing large quantities of blood for some months; was hence pale and bloodless. Every means had been tried, but with only temporary benefit. No evidence of local disease could be detected per vaginam. The external orifice was so small that a finger was with difficulty introduced, and could just touch the os, which was close; but as there was a manifest fulness on the hypogastric region, without any definite tumour, a fibrous growth was suspected. This was made evident by dilating the os by sponge tents of different sizes for twenty-four hours. A rounded something could then be touched within the os. A vulsellum was guided carefully beyond the finger, and opened upon the tumour, and traction made. Little or no advantage was gained by this, and that little seemed more from the descent of the uterus itself, as the tumour did not protrude in the smallest degree. The scissors were then carried up, closed, on to the tumour, guided by the finger, and with the curve of the instrument pressed upon the tumour, made to take a sweep over its surface as far as could be safely attempted, my object being to ascertain, if possible, the site of the peduncle, which any unusual resistance to its free movement would indicate; and knowing from experience that generally the attachment is towards the posterior part, I began there, and fortunately at once succeeded. A very few incisions enabled me to rotate the tumour, showing its separation, when it was at once brought away. The tumour was perfectly globular, as hard as cartilage, as large as a hen's egg, and with a long slender peduncle. She recovered well. I saw no more of this patient until the end of 1858, when, in consequence of similar symptoms, another polypus was suspected, and preparations were made for its removal; but though the os was dilated with sponge tents, and the tumour felt by the tip of the finger, the external parts were so small and rigid, and the tumour so far distant, and completely within the uterus, I did not think it safe to proceed to its removal by excision without enlarging the vaginal orifice by the knife As this was not acceded to, I recommended ergot in repeatedly increasing doses. This succeeded; the tumour came away in a disorganized state, and she remained for some time well, until May 1859, when two similarly sized tumours were excised. Again, in March 1862, one was excised; and lastly, in August 1863, five were removed by enucleation alone. I was at this time enabled to bring the first tumour partly through the os, and thus could feel one end of the vulsellum; and by insinuating my finger into the rent made in the covering, and by dragging forcibly at the same time, it was easily enucleated and brought away. A similar proceeding was adopted with all the others. Three of the tumours equalled a billiard-ball, and two that of a pigeon's egg. This patient died in 1866, three years after, of disease of the kidney; but from the date of the last operation there had been no indication of returning uterine disease.

The last cases I shall detail were removed by ergot. Both were of enormous size. One patient looked more like a woman with ovarian dropsy, from the extreme distention of the abdomen. Both cases were sessile, and both entirely intra-uterine.

Mrs S——, aged 44, mother of two children—tall, and of an exsanguined sallow look. I saw her first in January 1855. The history was similar to most cases of the kind. The catamenia had been in excess for eight years, and always mixed with coagula, and followed by a copious watery discharge, so that for upwards of eighteen months she had never been more than eight days dry during the month. Three years ago she first noticed that her belly was fuller and swollen; this has gradually increased, so that now the whole abdomen is large and tense, occupied by a solid mass, extending from the pubes to the ensiform cartilage. It is uniform and hard, and only tender along the inner edge of the right ileum. *Per vaginam*, the os is with great difficulty discovered, being merely a slight dimple or depression in the roof of the vagina, and very far back. The space between this and the pubes is large, bulging, round, and firm, showing clearly that what distends the abdomen is contained within the uterus, from the complete obliteration of the neck. *Per rectum*, the same rounded, hard, and insensible mass presses as far as can be reached upon the sacrum. The long continuance of such a drain has brought on a train of other distressing symptoms. She is extremely weak; even when at her best, she cannot walk twice across the room. She has an irritable stomach, entire loss of appetite, constipated bowels, and constant difficulty in emptying the bladder; and when the catamenial periods come on, any attempt at raising her head from the pillow is followed by fainting. Added to these, she has for the last few months suffered from severe grinding pains during the flow, particularly referred to the spot already noticed along the inner edge of the right ileum. She had tried various means, and as many medical men here and elsewhere, but with little or no benefit. One month she would be better, the next much worse, but withal a steady increase of her abdomen. My first object was to lessen the discharge, and shorten the periods, as I confess at this time I had no expectation of effecting a cure by the removal of a tumour of such a size. She took large doses of tinct. cannabis, 30 drops every three hours as soon as the discharge appeared, and continued this during the flow. By this means, the period was curtailed to four days, but the coagula were immense. Cold was steadily kept upon the abdomen during the whole time. At the next period, the same means were pursued, but with no better result. I then gave her ergot in powder, with the view of producing permanent or continuous contraction of the womb,—hence of its vessels,—and thus cut off the supply of blood to the tumour. I hoped, also, that the medicine would, as it sometimes does, act in dilating the os, and thus render any subsequent operation, if necessary, more easy. She commenced taking five grains every two hours. On the second day, some contractions began, with regular intervals, like labour pains. On the afternoon of the same day the pains increased in severity, and with a sense of forcing. On examining per vaginam, I was agreeably surprised to find the os more within reach, and open to the size of a shilling. On the third day, the pain was very severe, nearly continuous, and accompanied with so much pain and tenderness at the lower part of the abdomen that it was only by persuasion that she continued the powders, feeling satisfied that they were the cause of her suffering. Towards midnight the suffering was intense, requiring fomentations, hot laudanum, and opiates; while she had constant nausea, faintness, and an almost uncountable, small pulse. Next day (the fourth) the pain had greatly subsided, and the ergot was recommenced. The os was now open to the size of a crown-piece, very dilatable, and the tumour distinctly felt pressing through it. During this period there had been comparatively little discharge. On the morning of the sixth day from commencing the ergot, she was alarmed by the urgent desire to strain, and the feeling that something was coming away. On my seeing her, I found a long mass, as thick as my wrist, of putrid matter like intestine, hanging at least a foot out of the vagina, and passing from within the uterus. On attempting to extract it, it broke away just within the os. I was now satisfied that if her strength could be maintained, the whole mass would be removed. The ergot was now stopt, and strong beef-tea and brandy given at intervals, as she still was at times faint. Similar long masses of fibrinous putrid matter continued to be removed two or three times a day for the next five days, until on the last day they were mere long membranous shreds. During the whole period the quantity of watery discharge was something marvellous, as it ran through blankets and mattress on to the floor, arising, no doubt, from the softening and decomposition of the tumour; so that the remains of it which passed from the vagina could have formed but a very small part of the bulk of the tumour.

The result was in every way gratifying. She gradually recovered her strength, and what was more satisfactory, menstruation returned with moderation and regularity, until it finally settled in her forty-sixth year. This lady died in August last; and, anxious to learn her subsequent history since 1855, and cause of death, I communicated with her son, an esteemed clergyman in the south of Scotland, with whom she resided. In his reply, he says: "She never had any return of the tumour, nor suffered in any way from any thing connected with that. Indeed, except neuralgia, she enjoyed very good health until quite recently. But the immediate cause of her death was a violent attack of British cholera, which was very sudden."

The next case was equally interesting. The tumour was of enormous size, extending from pubes to near the scrobiculus cordis; yet notwithstanding her size, she was enabled to continue her avocations as a cook in a family of distinction until a few months ago. Another peculiarity was, that her ailments were mostly from pressure upon the bladder and rectum, neither of which acted without help, for she had lost no amount of blood to tell upon her general health. Her catamenia were merely in excess, and only now and then accompanied with coagula.

Ann A——, aged 33, unmarried: a cook. This patient was sent in by Dr Manson of Banff for my opinion of her case in September 1866, with a fibrous tumour of considerable size. He stated that she had twice had retention of urine, and fæcal accumulation, from pressure of the tumour both back and front. The tumour was first observed four year ago. On examination, I found the os small, thin, and rigid, the wall of the cervix very thin, and spread over the tumour, which bulges in the vagina. The sound passed easily 5½ inches. I suggested the use of bromide of potassium, dilatation of the os, and then breaking up or gouging the tumour, or ergot. Nothing, however, appears to have been done, as he did not again see her. My next interview was at the request of Dr Harvey, whose patient she now was in the Infirmary here, in May 1867. The tumour had much increased in size, the catamenial periods were more prolonged, attended with pain, and her general health had given way. There was now very considerable difficulty in detecting the os, from its extreme thinness and intimate adhesion of its edge to the tumour within, so that several of my friends failed in detecting it. At length, after a minute search, a small crescentic edge was suspected, and here, by persevering and gently insinuating the nail of the finger, a slight separation was effected. This was continued for half an inch, and then passed around until the whole circle, which was as large as a shilling, was separated. A sponge tent was introduced. She then commenced taking ten drops of the liquid extract of ergot of the pharmacopœia every two hours. On the following day, she had gnawing pains in her back and vomiting after taking the drops. They were therefore omitted for twenty-four hours and a larger tent passed within the os. The next day, being less sick, she was examined under chloroform, and the tumour further detached by the finger as far as could be reached, but from the smallness of the external orifice, this did not exceed 2 inches. The ergot was increased to twenty drops. On the fourth day, the drops were increased to thirty every two hours. During the night she slept little or none, from the pain and continuous straining efforts; and next morning she saluted me with the remark, "that she was sure she was to be delivered of something." On examination, a mass as big as the closed fist was protruding through the os, which I removed. After this she had no pain for some hours, and the drops were increased to forty every two hours. From this time, numerous similar rounded pieces, varying in size, continued to come away, or were removed by the hand, for ten days, accompanied with a copious watery fœtid discharge. I need not prolong the details. She gradually recovered her strength; and on the twenty-first day from the commencement of the treatment, she left the hospital quite well. I saw this patient yesterday (15th October). She has grown fat, and been in perfect health, has menstruated healthily, while the os, cervix, and size of the uterus is perfectly normal. The weight of the tumour preserved is six pounds twelve ounces: it is purely fibrous in its character.

ARTICLE III.—*Cases of Ovariotomy.* By THOS. KEITH, F.R.C.S.E.

(Continued from page 416.)

CASE LIV.—*Dermoid Cyst. Ovariotomy. Recovery.*

IN August 1866, a medical man from Cheshire asked me to see his wife on account of an ovarian tumour, to which his attention had been first directed three months before. She was forty-two years of age, dark, thin, but healthy-looking. She had been married seventeen years, and was childless. Soon after marriage, a tumour was detected in the pelvis, which was supposed to be an enlarged retroverted uterus. Till three years ago her health was good. She then began to suffer from severe pain in the sacrum when lying down, and was unable to turn in bed or sit up without assistance. There was general irritation in the pelvis, which was aggravated during the periods. Latterly, there had also been irritability of the bladder.

The tumour reached to a little above the umbilicus; it was tense and unusually prominent. It was movable, distinctly fluctuating, and seemed to consist of one cyst, except to the right of the umbilicus, where there was a small solid portion in the wall. Stretching from this, in a sort of depression, was a round tense band. This terminated in the corner of the uterus, which was completely drawn into the abdomen. The uterus was small, could be grasped between the fingers, and was movable on the tumour. The pelvis was occupied by a smooth, firm, fluctuating tumour in the position of the fœtal head before it reaches the floor of the pelvis. The vagina was elongated; its anterior wall very much on the stretch, and the cervix uteri could just be felt a little to the left of the pubic arch. The diagnosis given was—"Tumour of right ovary, filling the pelvis—no parietal adhesion, and either non-adherent in the pelvis, or fixed merely by bands; from elevation of uterus no difficulty expected in securing the pedicle externally."

This simple view of what had hitherto been looked upon as a complicated case, was confirmed by my brother and Dr Matthews Duncan. As the tumour was small, it was thought right not to advise any immediate interference with it, and she returned home for a time. She increased at the rate of an inch and a quarter a month; by November, there was aggravation of all the former symptoms, and she came to town for operation towards the end of February 1867.

Ovariotomy was performed on the 28th of February. Dr Peddie, Dr Duncan, and Dr Stevenson were present. Anæsthesia was produced by a mixture of three parts of ether and one of chloroform. There was no parietal adhesion. The cyst was extremely thin, and the contents would not flow through a large canula. It was opened and emptied of masses of hair and fat. There were some bands of adhesion in the pelvis. These all gave way, except one, which came from the bottom of Douglas's space. It was tied, the ends of the ligatures being cut short. The pedicle was secured by a small clamp, the pelvis sponged from a quantity of red serum, and the wound closed by five deep silk sutures.

Recovery was almost uninterrupted, and she returned home four weeks after operation.

CASE LV.—*Multilocular Ovarian Tumour. Ovariotomy. Recovery.*

Mrs M——, aged 35, came to me on the 15th of March 1867, on account of an ovarian tumour which had been observed after her first confinement, six months before. During her pregnancy she had suffered very much from distention. The cyst was multilocular, and there was general coarse crepitus over the right side. The measurement at the umbilicus was 40 inches. The uterus was central, normal, and movable. She was very thin, but her general health was fairly good.

A favourable prognosis was given, and ovariotomy was performed on the 18th of March. One large cyst was tapped, and the rest of the tumour broken up. There was only one patch of parietal adhesion over the edges of the ribs on the left side. It was extremely firm, and in separating it, the serous covering of the cyst was torn off and remained. It felt hard and rough, as if containing some bony or earthy matter. The hæmorrhage from this was so free that, after tying several bleeding points, it was necessary to pass a needle under it, and include in three portions the whole of the bleeding surface, cutting the ligatures off short. The pedicle was secured by a clamp two inches from the right side of the uterus.

She vomited some frothy mucus during etherization, but there was no after vomiting. She had a red dry tongue, a good deal of flatulent distention and highly concentrated urine for the first three days. On the fourth evening after operation, the pulse was only 66. She had, however, a restless night, and in the morning the pulse had risen to 100. By the sixth day, the pulse was 120, respirations 32; temperature 102·1; and there was some fulness of Douglas's space. This state of matters continued for some days. I thought of puncturing behind the uterus, but as the tension did did not increase, and the pulse began to fall, I waited. On the eleventh day, several ounces of matter were discharged from the bowel; the swelling in Douglas's space disappeared; she recovered rapidly, and went home twenty-eight days after operation.

CASE LVI.—*Nearly Unilocular Cyst. Ovariotomy. Recovery.*

In October 1865, I saw a lady fifty-eight years of age with a single unattached cyst of the right ovary filling the abdomen. She was of a nervo-bilious temperament, thin, but fairly healthy-looking. Some time before, there had been great œdema of the lower limbs, which still continued to a certain extent. She had for long suffered from headache and various neuralgic pains, with general irritation of the mucous surfaces. A very favourable prognosis was given, but no interference was then recommended, as the tumour had been of slow growth, and had hitherto given rise to little discomfort.

She was seen again a few weeks afterwards on account of acute abdominal inflammation with severe vomiting. There was general tenderness, with fine crepitation, over the upper part of the cyst. In a few days this gave way to a considerable amount of ascitic fluid, which in its turn disappeared in a fortnight. For the next two months, however, there remained a fixed pain in the region of the gall-bladder, accompanied by irritability of the stomach, dark grumous vomiting, and rapid loss of flesh.

These symptoms entirely disappeared after tapping in January 1866. Thirty pints of dark bloody fluid were removed, and the cyst was found to be still free. For some months, her health was excellent, but with the refilling of the cyst came a return of the former symptoms, and I removed the tumour on the 9th of April 1867, fifteen months after the tapping. There was no proper pedicle, so that the largest sized clamp was placed around the neck of a thick cyst—the branches being separated fully an inch.

Sulphuric ether was given instead of chloroform. There was no after vomiting, little pain, and no opium was required, though on account of the slow cicatrization of the thick pedicle, convalescence was somewhat slower than usual.

Case LVII.—*Very adherent Multilocular Tumour. Ovariotomy. Recovery.*

In April 1865, I saw, with Dr James Sidey, a married lady, twenty-five years of age, soon after her second confinement, with an acutely inflamed ovarian tumour reaching to a little above the umbilicus. It had been detected the year before, and in the previous August she had an attack of acute abdominal inflammation. At that time there was so much tenderness of the cyst that scarcely any examination could be made. After some weeks' confinement to bed, the pain and distention disappeared, and it was agreed, in the absence of any urgent symptoms, to delay interference. Her health continued good, and, notwithstanding the gradual increase of the tumour, her third child was born in December 1866, and was nursed for six months.

She was seen again on the 17th June 1867. The measurement at the umbilicus was then fifty inches, and from the ensiform cartilage to the pubes twenty-five inches and a half. She was thin, and suffered very much from pain, distention, and sleeplessness. Ovariotomy was agreed on, and performed the following afternoon. Anæsthesia was produced by a mixture of three parts of ether and one of chloroform. There was no vomiting during nor after the operation. It lasted an hour and a half, and only once before have I met with such intimate adhesion. From the umbilicus to the pubes, over the left iliac region and iliac fossa, the adhesion was so close, and the matting together of the tissues so confusing, that after a long dissection, I was almost on the point of abandoning the operation. The omentum came in between the cyst and wall, firmly adherent to both. It was cut away, tied in three portions, and secured in the wound at the umbilicus. The cyst was also connected to the left side of the pelvis by a very broad attachment, thicker than the pedicle. This was divided, and secured by a clamp. The pedicle was on the left side, and was of fair length. There was more blood lost than usual, and a number of vessels and oozing points required ligatures. The ends of all these were brought outside. The wound when closed gave exit to the pedicle, the broad pelvic attachment, the stump of the omentum, and to at least twenty ligatures. On examining the cyst afterwards, it was found that a part of its thickened peritoneal covering was missing. Part of this I had cut away before closing the wound, thinking that it was a piece of peritoneum that had been separated. I think that a piece the size of the hand must have been left adhering to the wall. The weight of the cysts and cyst contents was upwards of fifty pounds.

For the first three days the pulse ranged from 115 to 130. Much opium was necessary to allay pain and quiet restlessness. She then did fairly well till the seventh day, when, after a restless night, there was found on the dressings some fœtid red serum. I had watched for some days the signs of a collection of fluid forming above the umbilicus. This was punctured, but only gave exit to a quantity of clear yellow serum—not the least fœtid. The upper part of the wound was then broken up by the finger, and a collection of very putrid sero-purulent matter opened into. The cavity was washed out with a strong solution of sulphite of soda, and a drainage tube was put in. After this her convalescence was rapid, and she drove to Lasswade twenty-five days after operation, though two of the ligatures did not separate for nearly two months.

CASE LVIII.—*Multilocular Ovarian Tumour. Ovariotomy. Recovery.*

In February 1867, I saw, with Dr Peddie, Mrs W., aged forty-three, from Berwick, with a very large ovarian tumour. She had œdema of the lower limbs, abdominal wall, and loins. The uterus was pushed to the right, and I could not satisfy myself that it was possible to isolate it from the tumour, a large portion of which was felt in the pelvis. A gallon and a half of very thick fluid was removed by tapping at the umbilicus. The rest of the tumour was semi-solid. The general condition of the patient, and the state of parts in the pelvis, did not then lead me to be very sanguine about this case, and the chances of success and failure after operation were looked upon as equal—not more.

She came back in April. The tumour was nearly as large as before, and the condition of parts in the pelvis still unsatisfactory. I was then unable to do ovariotomy for her, and she was advised to go home and delay tapping as long as possible, in hopes that, as the tumour enlarged and grew upwards, the connexion between the tumour and uterus would become elongated. She returned in two months, having very much increased in size. Her general condition had improved, though the œdema of the abdominal wall and limbs was excessive. The girth at the umbilicus was fifty-three inches, and from the ensiform cartilage to the pubes thirty-two inches. The uterus was now distinctly movable, and none of the tumour was felt in the pelvis.

She got cold on her way into town, and had a smart attack of pleuro-pneumonia of the right side. On the 7th of July there was so much pain and dyspnœa, with such a feeble, rapid pulse, that, to prevent her becoming asphyxiated, she was tapped late at night. Three gallons of fluid were removed with much relief, and ovariotomy was performed on the 16th July, the lower part of the right lung being still dull on percussion. Dr Kimball of Lowell, U.S., Dr Philipsen of Copenhagen, Dr Wilson of Berwick, Dr Peddie, etc., were present. A mixture of four parts of ether and one of chloroform was given by Dr Gamgee. The incision extended from two inches above the umbilicus to an inch and a half above the pubes. The œdema of the wall had quite disappeared since the tapping. The anterior cyst was held forwards, opened, and the tumour broken up. There was some parietal adhesions above the umbilicus, and some high up, near the liver. In this adhesion a vessel required a ligature. A firm thick band from the pelvis was transfixed and tied, the ends of the ligatures being cut short. The pedicle was longer than was expected, and was secured by a clamp two inches from the right side of the uterus. The left ovary was quite natural. The wound was closed by eight deep silk sutures.

There was no vomiting. She had little or no pain, and required no opium. The wound healed without discharging at any point a single drop of matter. The clamp was allowed to fall off, and the whole amount of pus from the small granulating surface left did not in all exceed a teaspoonful. She left town on the twenty-eighth day after operation.

Case LIX.—*Semi-solid Tumour with Ascitic Fluid. Chronic Peritonitis. Double Chronic Pleurisy. Thoracentesis. Ovariotomy. Death five days after from Pleurisy.*

This case will form the subject of a separate communication, along with several other cases of chronic pleuritic effusion complicating ovarian disease.

Case LX.—*Multilocular Ovarian Tumour. Adhesions in Pelvis. Ovariotomy. Recovery.*

In September 1867, an unmarried lady, twenty-three years of age, from Kincardineshire, came to me for operation by the recommendation of Professor Dyce of Aberdeen. The tumour had been of rapid growth, for increase of size had been observed by the patient's friends only six months before. The measurement at the umbilicus was thirty-eight inches. The cyst was unattached above. The uterus was unusually low in the pelvis—the os uteri pointing backwards to the sacrum. Its position was exactly such as I have seen in cases of extensive pelvic adhesion. Here, however, the uterus was fairly movable, and though the roof of the vagina was depressed, and felt somewhat tense, there was no evidence of adhesion, though a short pedicle was looked for.

The general condition was excellent, and hitherto the tumour had given little inconvenience. The family history, however, was not good, several members having died of phthisis, and early operation was recommended. Ovariotomy was performed on the 30th of September. Sulphuric ether was given instead of chloroform. About two-thirds of the tumour consisted of one large anterior cyst, the rest was semi-solid. It was broken up, and its removal was extremely embarrassing, from adhesion of old standing low in the pelvis. One very thick short attachment was with some trouble transfixed and tied—the ends of the ligatures being cut short. There was almost no pedicle, and a large clamp was applied round the neck of a thick cyst about an inch from the left side of the uterus. The strain upon the pelvic tissues was considerable. After waiting till all bleeding had ceased, the wound was closed by seven silk sutures,—the operation having lasted nearly an hour and a half. The broken down cysts and contents weighed thirty-one pounds.

There were no unfavourable symptoms, and she returned some twenty-eight days after operation.

Case of incomplete Ovariotomy. Recovery.

Mrs M., aged forty, came to me from Professor Maclagan. Her general health had for long been indifferent on account of extensive callous ulcers of both legs. An ovarian tumour had been detected after her last confinement, three years ago. Its increase had been slow. The measurement at the umbilical level was forty-three inches. The cyst was single, and moved very freely with the respiration. The uterus was central, normal, and movable.

The case appeared the simplest possible for ovariotomy. On the morning of the 17th of August, the day fixed upon for operation, when noticing the unusual mobility of the cyst through the thin abdominal wall, it was observed that near the upper margin of the tumour a piece of intestine moved with it. The diagnosis, therefore, written down before operation was, " single cyst, free in front and in pelvis; some adhesion of intestine, and probably also of omentum, to upper part of cyst." There was no parietal adhesion, and after tapping the cyst, it was drawn out, when it was found that so extensive and intimate were its posterior attachments to the small intestine, mesentery, omentum, colon, aorta, and common iliac vessels, it would have been unwise to have attempted more. The adhesions had taken place early, when the tumour was small, probably during her last pregnancy, and had grown with the growth of the cyst. Therefore, most reluctantly, and for the first time of sixty-one operations, I felt it my duty to close the wound, leaving the large opening made by the trocar patent.

There was no more disturbance of system than after an ordinary tapping. The wound healed without discharging a drop of matter, and when this patient was seen two months and a half afterwards, it was impossible to tell whether a cyst existed or not, and she was in excellent health.

Of these sixty cases of completed operation, forty-seven are now alive and well. Of the first thirty, nine died; of the last thirty, all recovered save four. Both ovaries were diseased, and were removed in six cases. Five of these recovered. Two others have been successfully operated on during the past month. In one of these the ends of at least thirty ligatures were left in the abdomen. So that the general result of sixty-two operations is forty-nine recoveries and thirteen deaths, or almost eighty per cent. of recoveries.

ARTICLE IV.—*Notes on some of the Diseases Prevalent in Victoria, Australia.* By W. LINDESAY RICHARDSON, M.D., for six years one of the physicians to the Ballarat District Hospital.

IT may be considered as a recognised truth that climate has more or less influence on the topography of disease, and that different diseases are localized among races of men in certain latitudes. That climate produces modifications of familiar diseases in the same races, is also an established fact; but that telluric influences, apart from climate and race, affect the character and behaviour of disease is not, perhaps, so generally admitted. Having spent some years in active practice in Victoria, it has occurred to me that some short account of bedside experiences there might not be altogether uninteresting, especially to those now applying themselves to the study of Medicine, some of whom may find their way out to that rising colony, whose main want is inhabitants.

In the map accompanying Dr Aitken's "Science and Practice of Medicine," Victoria is represented as "very healthy." That this may have been the experience of early settlers, I can well understand; that it is so now, I must deny. The ordinary zymotic diseases, inflammatory affections, and epidemics, occur at different seasons, as in other countries. It is true that some diseases, common enough in Europe, as Asiatic cholera, typhus fever, cerebro-spinal fever, smallpox, hydrophobia, and ague, have as yet there no existence. A rigorous quarantine is enforced; and the question of the possibility of sporadic generation of contagious diseases may here meet with a solution.

I have said that typhus fever is not met with,—such is my experience during ten years' residence. I am aware that cases have been *reported* as occurring among emigrants, newly arrived from shipboard at Melbourne. Two of these cases, from different ships, one from the "Donald Mackay," found their way inland to Ballarat. They were considered to be enteric fever. It would be well perhaps if, in reporting cases of this sort, the reporters gave their reasons for believing the cases to be typhus.

The fevers of Victoria are, then, a typhoid and a remittent. I use the article, because, although the first bears a general resemblance to that so common now in our large towns, it is an analogous but not identical fever. It is, without doubt, an enteric fever, as shown by the constant occurrence of diarrhœa, while an examination of the intestines after death reveals the lesion, ulceration of the glands, at the lower point of the ilium.

The approach of the attack is marked by languor, pain in the back, and headache,—cold rigors are not an invariable accompaniment. I looked for a rash for many years without finding any. Within the last few years, however, Drs Hudson, Whitcombe, and myself (possibly many more) have noticed what we believe to be an eruption peculiar to the enteric fever of Victoria. It is not a papular or raised rash, it is not definite in its shape, but is small, with clear defined edges of all shapes, the size of mustard-seeds. It does not disappear on pressure. It varies in colour from bright red to purple. It appears in successive crops over the front aspect between the first and second weeks. It is not always present. This fever is most prevalent in the *autumn months* of March, April, and May; cases do occur in February and June, and indeed sometimes, though rarely, through the winter—these, however, are exceptions. It attacks young persons, but not in the same proportion as adults; I consider it as a disease of adult life, as I consider the remittent, to be described subsequently, as a disease of childhood. It goes through families. It appears capable of being transported from place to place by media of communication. It is admitted into the hospitals, the patients not being separated, but intermixed with others, who do not appear to contract it. It occurs more than once in the same individual. The climax, in mild cases, takes place about the end of the second week; in severer ones it runs on to the third and fourth, when, of course, the chances of recovery are diminished. Relapses occur during convalescence. If the cerebral congestion is not intense, and coma does not come on during the second week, the lesion in the intestines may endanger life; if both of these dangers have been got through, the patient may still sink, in protracted cases, from secondary blood-poisoning. This fever is not confined to the centres of population, but is frequent in the country and bush. It has not arisen with the increase of population, and, as might have been supposed, imperfect sewerage, but has been a familiar enemy from the earliest recollections of the oldest inhabitants, and has been known by the term "colonial fever." My general recollection of many years among it is, that, if seen early, the cases may, as a rule, be piloted through; nevertheless, at any time, untoward and unexpected complications may arise to endanger life, or to increase the anxiety of the medical attendant. Our treatment, I presume, accords with that of rational men elsewhere,—it is to place the subject in as favourable conditions as possible to go through the attack, and then to look constantly ahead. It will always be found beneficial to bear in mind the advice of the late Professor Alison,—"Get your fever patients to bed early in the disease, and keep them there;" this, and sponging with tepid water night and morning, free ventilation, and good support early, are the main points in the treatment of this disease. As the head symptoms may be severe, it is advisable to have the hair removed early to allow the free application of cold to the scalp, and to ensure a good crop on recovery, instead of an irregular growth that falls out in handfuls. Tincture of belladonna in small doses will be found most serviceable if cerebral congestion be present. For the enteric complication, turpentine is most efficacious, and deserves all the praise bestowed upon it by Dr Wood of America. It has never failed in my hands, during the last three years, to check, within moderate bounds, discharges which had before its administration numbered eighteen or twenty-four evacuations in the twenty-four hours. This checking, by this medicine, of the discharges, which some look upon as elimination of a fever poison not lightly to be restrained, is not followed by tympanitis, as is the case after the closing of the bowels by other astringents. My experience of all injections is, that they distress the patient, and are of no benefit,—how, indeed, can they be expected to exert any beneficial action when the seat of the lesion is considered? Our experience of stimulants has, strange to say, been what I found on my arrival home. For the last few years many of us have been diminishing the quantity, getting down from the old ten or twelve ounces of brandy, and as much wine, in the twenty-four hours, to a few ounces of one or other when the circulation begins to flag.

The remittent fever is a disease of youth; it is indeed occasionally met with attacking adults, as typhoid in exceptional cases attacks children. I have never seen children under eighteen months suffering from either form.

It is characterized by a periodicity of two kinds—1st, a diurnal remission or absence of the fever, which is well marked. The fever may commence with rigors, but they are not of daily occurrence. A languor and general sense of prostration are the first noticed signs, these are followed by flushed face, headache, white tongue, and talking in sleep, with a vivacity during the remissions which naturally enough astonishes the parents, or causes them to attach often little heed to the child's complaint.

As a rule, I have found that the febrile symptoms are most frequently absent, or abate in the early hours of the day; the pulse gets down, the skin cools, and the patient gets quiet sleep between daylight and noon. The period of exacerbation I have usually found is *toward afternoon*, as the heat of the day reaches its maximum. In fifty cases that I noted, I found this in thirty-nine; in the other eleven it occurred *near or about noon*.

The hot or febrile stage varies in its duration from six to twelve hours; at the commencement of the disease it is not of the same length as in the second week. I remarked that it appeared to increase in duration daily until it reached the climax, when it as gradually receded, both in the duration and hour of its advent.

The duration will, if closely watched, be found to be a period of six to seven days, at which period changes for the better, breaks in the daily exacerbations, may be observed. Cases, according to their intensity, will culminate in the first, second, or third period. I met with two cases only which lasted longer, one running on to six periods, and the other continuing for months. There can be no doubt that cases commencing as remittent, and continuing so for the first week, change their character and go on to typhoid, in which state the duration of the illness must be reckoned, and its periodicity calculated, not from its advent as typhoid, but from the first signs of remittent. These cases are, however, rare. This affection is often called "worm fever" by the parents, and medical men frequently fail to distinguish it from "colonial fever," especially if diarrhœa be present. It occurs more than once in the same individual. I have met with cases of paralysis and hemiplegia in children coming on during this fever, and in which the signs of cerebral disturbance were not such as to occasion any apprehension. It certainly, if uncomplicated, is not an affection dangerous to life, and on this very account I am not familiar with any special appearances after death.

From the general character of this affection, it will be noticed that meddlesome interference, or the administration of useless medicines, may complicate the natural process of recovery. If seen early, the patient will be benefited by daily spongings, by total repose, by giving the stomach little to do, and, if possible, by *removing him* to another residence. There will be some constipation at first, which can be obviated by daily enemata of warm water; the hair may be removed, and cold affusion practised, if the delirium or headache be intense. I cannot say that I have seen any benefit from quinine, and I have used it in all doses in all stages of the fever. Large doses I have found increase the headache, and, what often follows the constipation, intestinal disturbance. In cases that run over the second week, I, as a rule, prescribed arsenic, without at least observing any bad symptoms follow.

I have no doubt that many will set this fever down as malarial. It cannot be denied that the elements of malaria exist in Victoria. There is there a period of wet, a period of heat or drying; there exist there swamps, marshes, undrained land, in which vegetable matter in all stages of growth flourishes. Nevertheless, in the face of these facts, I do not believe it to be a malarial fever, because—1*stly*, It is not confined to the neighbourhood of swamps, but is general in town and country, by the sea or in the bush, in high lands and low flats; 2*dly*, Because there is no intermittent or real marsh fever in Victoria; 3*dly*, Because in my experience quinine in any dose appears to exert no marked influence on the duration of the attack.

The occurrence of encysted hydatid tumours is exceedingly common in Victoria. The affection has become so prevalent of late years, that it may be called a disease of the country. Dr Fawell Hudson of Ballarat was the first to call the attention of the profession to their frequency, in an article published in the *Australian Medical Journal*, April 1860. His cases were met with principally in the liver. Since that time all medical men have had more or less experience of them. The Ballarat hospital always contained one or more cases. Their most frequent seat is still the liver; indications of their presence are, as might be imagined, symptoms of a foreign body, sense of weight, fulness, dulness over an increased space, an indistinct vibratory thrill on pressure or percussion: their existence is more complained of by the patient during thunder-storms and atmospheric disturbances; their pressure on the ducts may, by obstruction, occasion more or less tinting of the skin. Other affections of the liver, as congestion, inflammation, obstruction, enlargement, etc., frequently come under the notice of the medical man, and it will be evident that there is often a nice discrimination required in making a correct diagnosis. These tumours become developed rapidly; no medicines administered internally appear to exert *any* influence on their growth, or to produce absorption; as mechanical obstructions, their removal is the indication. When they are confined to the liver, this is done by repeated tappings with a fine trocar and canula. The amount of fluid that may be drawn off varies with the age of the tumour; I have seen from two to three ounces to as many pints. It is well known that the fluid is saline to the taste, limpid in appearance, and contains no albumen: s. g. 1010 to 1014. Examined with a glass of two to three hundred diameters, it will be found to contain the echinococci. After the operation, we often find the patient covered with urticaria, which is accompanied by a quickened pulse and other symptoms of irritative fever. This appears to be caused by the escape of some of the fluid into the peritoneal cavity; the constitutional disturbance, however, subsides in about forty-eight hours. After two or three tappings, the tumour does not refill; a gradual contraction of the enveloping membrane ensues, and the tumour, shrunk and contracted, becomes converted into a cheesy matter, which, *I presume*, is removed ultimately by absorption, as it gives no further trouble in the great majority of cases.

These remarks apply to the existence of these tumours on the concave surface of the liver; their presence on the convex or upper surface is attended with more serious results; they are then found to force their way upwards through the diaphragm into the thoracic cavity. There is a description of such a course by Mr Ralph in the *Australian Medical Journal* for July 1860:—"The tumour, which was situated on the convex surface of the liver, appears to have passed gradually through and above the diaphragm, carrying upwards the pleura with it; the tumour contained $2\frac{1}{2}$ quarts of fluid."

I was much amused by seeing in the report of the International Congress held at Paris, that a paper was read on "A New Operation for the Treatment of Abscesses of the Liver." "This consists in a puncture of the organ. The author prefers this mode of operation to that of Begin and Recamier, in which it is previously necessary to secure the adherence of the liver to the thoraco-abdominal walls." It has been practised in Ballarat for the last six years, both for the tapping of hydatid cysts, for the evacuation of abscesses, and for exploratory purposes into the substance of the liver.

The next most frequent seat of these troublesome parasites is the thoracic cavity. In these cases, as might be expected, the earliest complaints are of oppressed breathing, without, indeed, much pain. I recollect the case of a woman of middle age, and apparently in rude health, who sent for me more than once, on account of the sudden appearance of nettle rash, which covered the entire skin; there was, of course, considerable constitutional disturbance, but it all passed off, and was attributed to other sources. There was no indication pointing to thoracic ailment, and my attention had not up to that time been directed to this as one of the first evidences of the existence of hydatids in the lungs. There can be no doubt that some of the fluid must have escaped into the pleural cavity by the rupture of one of the cysts; here, as in the case of the peritoneum, absorption was followed by symptoms of partial poisoning.

Cough, expectoration of watery fluid, a saline taste in the mouth, are further evidences; as the disease advances, the sputum will be bloody, and there will be found in it from time to time, shreds of what are described by the patients as "chamois leather" or "skins." These appear to be the individual cysts; whether they are developed in the cavity of the thorax, free and *without* the firm fibrous enveloping membrane found elsewhere, or whether this remains attached to the lungs, and becomes absorbed, as in the case of the liver, I am unable to say. I incline, however, to the former opinion. As may be imagined, these cases, in different stages, simulate phthisis, limited abscess, and chronic pleurisy; the character of the sputum, and, above all, the absence of constitutional symptoms, or of emaciation, will, however, pretty clearly point out what it is not. The lungs seem capable of great power of restoration, and although recovery may be tedious, extending over many months, yet unaided nature in this case seems capable of perfecting recovery by an expulsion of the cystic entozoa, with their fluid and cysts. Treatment must be directed to support the patient, to alleviate the distressing cough, to assist expectoration, to relieve pain by hot fomentation with or without turpentine, and, above all, by the moral treatment of a certain assurance of ultimate recovery. Dr Martin reports a case in the *Australian Medical Journal* for Sept. 1865, which, complicated with tubercle, afforded an autopsy:—"On making an incision into the right lung, it was found hollowed out into a large cavity, and lined with a hydatid cyst, containing a large quantity of transparent fluid, in which other small cysts were floating. . . . On the anterior surface of the liver, another hydatid cyst was found, containing numerous other cysts. In each kidney a small hydatid cyst was found."

The occurrence of hydatid tumours in the cavity of the uterus is by no means rare. The symptoms are those of pregnancy in the early months, and the deception is only discovered by an inspection of what is expelled at some *supposed* abortion or miscarriage. As in abortion, if the uterus be hindered from contraction by any portion of the membranes being retained, we have serious hæmorrhage; so after a partial expulsion of the enveloping membrane which contains the numerous cysts, a portion may not have been expelled, and may occasion severe and dangerous flooding. This is, however, by no means the rule, as at the period when the uterus undertakes the expulsion, which will be found to be about the end of the third or the beginning of the fourth month, that organ possesses a contractile power generally equal to the occasion.

I find an opinion pretty general in works on this subject, to the effect that uterine hydatids are *degenerations* of the membranes of the fœtus. Dr F. Ramsbotham has so expressed himself; Mr Allan Jamieson reports a case in the *Lancet* for August 31 of this year, and expresses the same opinion—"That the case may be considered one of hydatid degeneration of the villi of the chorion." But, in the cases I am describing, a careful search will enable a good microscopist to find the echinococci in the cysts expelled from the uterus, just as they may be found in the fluid drawn from the liver. Their development occurs *more* frequently in unimpregnated uteri of those who have born children (see three cases reported in the *Australian Medical Journal*, April 1862, and Mr Jamieson's). They occur here as in other organs; they do not convert tissues, but secrete their own structures. Could it be shown that they destroy the tissues among which they are developed, their effects would be most malignant, and vastly more destructive and fatal to life than they are. The sufferings occasioned by their growth are produced by pressure as foreign bodies, extraneous presences in and around organs, and not by any mere functional interference.

They are found in the peritoneal cavity. I remember a case occurring in the practice of Dr Heisse of Ballarat. A child, aged three years, died with all the symptoms of acute peritonitis. An autopsy revealed the presence of a free hydatid tumour, in size about that of a flattened orange, lying on the intestines, ruptured. Dr Sutherland reported a case in the *Victoria Medical Record* for February 1863, of a former sheriff of Ballarat who died after a few hours' illness, in great pain, from the same cause, disclosed by post-mortem examination. Dr Whitcombe met with the same disease in the heart of an aborigine who had died suddenly, apparently in good health. I have seen them occupying the cavity of the eye in a patient in the Ballarat Hospital, the function and the tissues of the organs destroyed, although a discharge was effected. In the same place I have seen a female void the characteristic membranes *per urethram*, with little inconvenience, and trifling constitutional disturbance. A case is reported in the *Australian Medical Journal* for April 1863, of hydatids of both kidneys, "producing great difficulty and frequent micturition, with extreme pain across the loins, urine very scanty, of a dark reddish colour, slightly albuminous." A schoolmaster, temperate, received a violent fall on the loins five years ago; never free from pain since—often passed blood—complete suppression of urine took place 24 hours before death, which was by coma. Both kidneys contained large hydatid cysts, discovered by autopsy. Lastly, they are frequently encountered as encysted tumours on external parts of the body, as the supra-scapular region, the femoral region—the cheek: here their removal entire is easy, and recovery perfect.

As in Iceland, so in Victoria, this hydatid disease may be said to be endemic. The sufferers are found among those resident in town and country, of both sexes and of all ages. Sheep are found to suffer from the same disease, which gives rise to the watery blebs so often seen in the liver at the butcher's and to the affection called "staggers." This latter, manifested by the animals running about in circles, is found to be caused by the existence in the sheep's brain of these hydatid cysts, and "occurs in about four or five per cent. of the flock" (Hudson). These sheep were formerly the perquisites of the shepherds, who shared them with their dogs. Shepherds were, sure enough, found among the first recorded sufferers in the Melbourne Hospital; and many of them stated that they preferred *their mutton underdone.* It does not then require much imagination to follow the course of these embryonic tapeworms eaten by the shepherd's dog. They are matured in the dog, passed as tape-worms over the pasturage of other sheep, the ova are again taken into the stomach and system of the sheep, and circles of propagation are established. We have been in the habit of recommending that mutton shall not be eaten unless well cooked by roasting; that all water should be boiled before use for drinking purposes; and that all hydatid mutton should be destroyed. It has occurred to me that dingoes or native wild dogs, which infest some sheep runs in considerable numbers, destroying and devouring sheep, may also be sources of propagation and development for these parasites. The whole question is one deserving serious consideration, especially as the disease is not on the decrease. I am not aware of bullocks being subject to the presence of cystic entozoa,—it is certain that the livers exposed at the butchers' seldom, if ever, are seen affected.

Dysentery is a disease of constant occurrence. It appears to hold a place, as regards its intensity, midway between the disease met with in England and that so common and fatal in India. It differs from the English disease, like many of the Australian affections, only in degree. The earliest symptom is diarrhœa, this, neglected, is followed by pain at the rectum, and frequent discharges of mucous stools, which, if still neglected, go on to the passing of blood. According to the severity of the attack or the means adopted, these will vary from pure blood to stools containing shreds of intestine with albumen. The predisposing causes may be put down as extremes of temperature acting on persons naturally disposed to intestinal derangements. The thermometer during the summer months ranges from 80° to 100° Fahrenheit in the shade. At this season the disease is most prevalent, when diarrhœas and other affections of the bowels are most common. We can readily understand that the intestinal, like the circulatory functions, are stimulated and rendered more sensitive to derangement from causes which at other times might have no effect.

My experience extends over 89 cases, with 3 deaths, and includes my own personal knowledge of the disease and its sufferings. Although many cases are most severe and protracted, and although the attack is as prostrating as enteric fever, and as long often in its period of convalescence, yet the mortality is not great, and there can be no doubt the *tendency of the disease is to recovery.* In the examinations of the intestines post mortem, we found the affection confined to the rectum, ascending colon, and sigmoid flexure. In a paper I published in *The Australian Medical Journal* for October 1864, entitled "A Series of Cases of Acute Dysentery," I detailed different treatments I had adopted. Some had been submitted to the action of mercury, with leeches externally to the abdomen, subsequently blistered, and treated with enemata of starch and opium. Others had been treated homœopathically in good faith, and with a simple desire to test the virtues of their mercurius corrosivus and other specifics, and, before all, to relieve suffering in the speediest manner. While I am happy to say none of my cases terminated fatally under these opposite modes, the disease ran a course little, if any, influenced by either treatment. I found the great object was to prevent any matter entering the mouth which was likely to give pain. What nourishment might be taken that did not irritate or annoy the canal in its passage downward, as fæces, had to be learned by experience. Arrow-root, animal broths thickened with flour, answered. The system could not be kept up on these however, for in a week or two the nervous system became unhinged, the circulatory system flagged, and the reparatory process, or *the power* of repairing an extensive lesion, was retarded. Alcohol in the form of good brandy proved a remedy for all this. In spite of all the theories of our friends the teetotallers, it acts in this disease as a food. A tablespoonful or so in water frequently keeps up the pulse, gives no pain, and allays thirst. For the tenesmus, an occasional suppository of a grain or so of opium, with *domestic* soap, will be found most serviceable. In the paper already referred to, I mentioned that for some years I had prescribed, with great comfort to the patient, and with perceptible influence for the better on the disease, a combination of diluted sulphuric acid and tincture of opium. This treatment was begun about the year 1860. I perceive it has been found of benefit in India, and on a visit recently to the fever hospitals of London, Dublin, and Cork, I find mineral acids and opium employed for the enteric diarrhœa of typhoid. Of chronic dysentery I have not seen much; of morbid conditions resulting as complications or sequelæ of this disease, as hepatic abscess, etc., none have occurred in my practice.

ECCLES, MANCHESTER.

(*To be continued.*)

ARTICLE V.—*Ovariotomy in Russia.* By A. KRASSOVSKY, M.D., Honorary Physician-Accoucheur to the Court, Professor of Midwifery and Diseases of Women and Children to the Imperial Medico-Chirurgical Academy of St Petersburg.

IN Russia, as in other countries, ovariotomy was long looked upon by the profession with distrust and even fear. The principal reasons for this were:—1. The difficulty attending the diagnosis of cysts of the ovaries in general, and especially their complications and relations to neighbouring organs—for instance, the determination of adhesion, the length of the pedicle, the thickness of the walls of the cyst, the quality of the contents of the latter; 2. Fear of the consequences attending any wound, more or less extensive, of the peritoneum; 3. Hæmorrhage from the pedicle; 4. The possibility of leaving any foreign body in the cavity of the pelvis, as well as in the wound (ligatures); 5. The fatal results of this operation in some countries, as Denmark, Germany, and Paris; 6. Operations begun, but not finished, most of which terminated fatally, or brought no relief to those of the patients that survived; 7. The hopes of curing the disease by means of therapeutical and surgical operations apparently less dangerous than ovariotomy—as, punctures of the abdominal walls, vagina, with or without injections of a solution of iodine into the cavity of the cyst, after Boinet, drainage; and finally, 8. The powerful reaction on the whole organism, and especially on the nervous system, following the removal of tumours, not unfrequently of enormous dimensions. My own observations with regard to the treatment of cysts of the ovaries, both therapeutical and surgical, the latter consisting in punctures of the abdominal walls or roof of the vagina, followed in some cases by leaving a permanent gum-elastic tube, with a cock adapted to it, in the cavity of the cyst, in others by injections of iodine according to Boinet's method, drainage of the cyst, have led me to the sad conclusion that all these methods are utterly powerless, not only in colloid, but also in serous cysts.

Although a full account of those cases which came under my notice at St Petersburg in the course of five years, from 1858 to 1863, would at present be untimely, I shall, nevertheless, bring forward some extracts from such materials in my possession as relate to the methods of treatment above mentioned.

Twenty out of 32 cases of multilocular colloid cysts, which have come under my notice at the clinical wards, in hospital, and in private practice, were treated by punctures of the abdominal walls or roof of the vagina, without being followed by injections of iodine. In 4 cases the punctures were repeated twice; in 1 case, three times; and in 1, four. *Not one case of recovery.* Relapse of the disease after a longer or shorter period, or death from prostration, or in consequence of profuse suppuration in the cyst; and in 3 cases, speedy death from acute inflammation of the peritoneum.

In 8 cases, puncture of the abdominal walls or roof of the vagina, followed by injections of a solution of iodine. (Tinct. iod. aq. distil. āā ℥iii., iodidi potassii ʒj., solve.) *Not one case of recovery*, and death ensued in general still sooner than it did without injections of iodine.

In 2 cases, a tube of vulcanized caoutchouc, with a cock and apparatus adapted to it, to prevent the penetration of air in opening the former, was left in the cavity of the cyst. In both cases, rapid suppuration of the cyst, peritonitis, purulent infection, and death.

In 2 cases drainage of the cyst was attempted: in 1, both ends of the drain traversed the abdominal walls; and in the other, one end of the drain the abdominal walls, while the other was brought through the roof of the vagina. At first, in both cases, the contents of the cyst ran off through the drain, attended during the first few days with gradual diminishing of the volume of the cyst, and the general system of the patient being in every respect satisfactory, things seemed to promise good results, but thereupon the contents of the cyst changed, became foul, ichorous, fœtid, ulcerating the edges of the puncture, and demanding the removal of the drain, followed by erysipelas of the abdominal integuments, febrile symptoms and death.

The final result was, that in the course of five years, out of 32 patients with multilocular colloid cysts, 28, about whom I had the most accurate statements, died, 4 of whom, although I had no positive statements, left the clinical wards with clear symptoms of a relapse of the disease;—consequently not one case of recovery.

Out of 11 patients with unilocular serous cysts,—

One recovered entirely: she was 25 years of age, and had been delivered once. In 1863 a puncture was made through the abdominal walls; the fluid contained but very little albumen; an injection of iodine was allowed to remain within the cyst for five minutes, and was then removed. No inflammatory or febrile symptoms ensued, and the patient enjoys perfect health to the present day.

One patient had a relapse after a period of eight months. In 1865 the cyst was punctured through the abdominal walls, and 50 pounds of a serous fluid were extracted. An injection of iodine ℥ii. was allowed to remain during five minutes within the cavity of the cyst, and was then removed, followed by symptoms of acute iodism. During the first days the patient was in great danger: prostration, a quick, thread-like pulse, cold perspiration, unattended by the least local inflammatory action, caused anxiety for her life. These symptoms subsided under the use of stimulants in the course of twenty-four hours, and ten days after the patient left her bed. The cyst gradually contracted, and on the fifth week from the day the puncture was made there remained a tumour about the size of a goose's egg, which very soon disappeared entirely. Such results may be deemed most brilliant. Eight months after there appeared a cyst of the same (left) ovary, about the size of a new-born infant's head. At this period the patient became pregnant. During pregnancy abdominal puncture was resorted to twice, in the eighth and ninth months. After the first puncture about 70 pounds of fluid were extracted, and after the second up to 60 pounds. The latter fluid was of a greater consistency than the former. The patient was brought to bed at the normal period, and was happily delivered of an infant fully developed and healthy. After her delivery Professor Kieter performed two punctures in the course of three months.

At the present moment (December) the patient is living, is greatly emaciated, and fearing to undergo ovariotomy, has resorted to homœopathic treatment.

One patient had a relapse a year after the emptying of the cyst and injections of iodine. *Two patients died soon* after the punctures and iodine injections—one from peritonitis, and the other from inflammation of the cystic walls, with consecutive suppuration and symptoms of pyæmia.

In one case—puncture through the vagina for a cyst of the left ovary—16 pounds of fluid extracted; no injection of iodine. Excessive hæmorrhage of the puncture ensued on removal of the canula of the trocar. The latter was substituted by a thick gum-elastic catheter (a little thicker than the canula of the trocar), and the bleeding vessel thereby plugged; the hæmorrhage was arrested in the course of thirty-one hours, and the patient recovered. I kept her under observation during six months, and the last time I examined her there were no traces of the cyst. (I do not undertake to state whether she recovered perfectly, the period for observation after the operation being too short.)

One patient had a relapse of the disease after two simple punctures; she underwent ovariotomy (see cases).

Chronic inflammation of the peritoneum, attended by general prostration, ensued in two cases; in the one after the second, and in the other after the third puncture, and terminated in death. *Remark.*—Before and after the operation, such internal and external remedies were administered as are generally recommended in such cases.

Thus the result of treatment of unilocular serous cysts is, out of 11 *cases,* 1 *of recovery after puncture with injections of iodine, and* 1 *without the latter, if we may count a period of six months' observation sufficient to guarantee no relapse of the disease;* 6 *patients died, of whom* 2 *from acute peritonitis.*

The general result in 45 cases of cysts of the ovary *in the course of five years,*—1 case of perfect recovery, 1 doubtful; 34 cases of death, of which 5 from acute inflammation of the peritoneum. In the remaining 7 cases there was a relapse of the disease, but the time of death is uncertain.

Without denying the temporary relief afforded by punctures of the cyst through the abdominal walls, as well as through the vagina, especially unattended by injections of iodine, I regard this method of treatment as a palliative, and, in a general way, more dangerous (especially when attended by injections of iodine) than radical ovariotomy. Moreover, puncture predisposes to punctures —*i.e.*, favours a new accumulation of the contents of the cyst, and, as my highly esteemed colleague Professor Simpson very justly remarks, the consequence is always the same,—death through depression of the vital powers. At present I resort to puncturing a cyst only in extreme cases,—on pregnant women, and in such cases where there is not sufficient ground for diagnosis, so requisite in forming indications for performing ovariotomy: a probatory incision of the abdominal cavity, with a diagnostic motive, would be more efficacious than punctures.

The above-mentioned sad results of my observations on one hand, and the success of contemporary ovariotomists, such as C. Clay of Manchester, Baker Brown, Spencer Wells, and Tyler Smith of London, T. Keith of Edinburgh, Koeberlé of Strasburg, Stilling of Cassel, and many others, on the other, have convinced me that, for a radical cure of cysts of the ovary, there is but one means— that is, ovariotomy.

Notwithstanding the prejudices of my learned colleagues, the severity of the climate, and the fact that I had never witnessed ovariotomy on the living body,[1] on the 23d of December 1862, I determined to perform this operation in my clinical wards at the Imperial Medico-Chirurgical Academy of St Petersburg.[2] This was the first case of successful ovariotomy in Russia.

Soon after me, this operation was performed in Russia by Professor Geoube of Khaskoff, 23d May 1864; by Dr Tkovitz of

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[1] On the dead body, however, I performed the operation several times.

[2] Petersburger Medicin Zeitschrift 1863.

Tamboff, 27th June 1864; Professor Shimanoffsky of Kieff, 22d September 1864; Dr Sklifassovski of Odessa, 22d October 1864; Dr Kade of St Petersburg, 5th December 1864; Professor Karavaeff of Kiev, 25th February 1865; Dr Froben of St Petersburg, 9th July 1865; Professor Kieter of St Petersburg, 3d December 1865.

Soon after the brilliant results of the first cases of ovariotomy in Russia, Dr T. Masslovsky, a young physician to the Medical Academy, while studying in my clinical wards, undertook a series of experiments upon dogs, with the purpose of defining the following propositions:—1. What sort of ligature is best endured when left in the abdominal cavity? 2. What becomes of the ligature? 3. What are the changes undergone in the abdominal cavity by the cornua uteri when deprived of nutrition by means of a ligature, as also by the eschar formed by the application of the actual cautery to the former? And 4. What phenomena take place during cicatrization of the abdominal wound in such cases where the sutures traverse the peritoneum (deep sutures), and in those where they do not traverse the latter (superficial sutures)?

The results obtained from experiments on animals are the following:—

1. Animals apparently bear metallic ligatures, left in the cavity of the abdomen, better than silk ligatures. Fil de Florence ligatures, from the greater indifference shown to them by the animal economy, are borne much better by the latter than silk and metallic ligatures, both when left in the abdominal cavity and in the superficial wound. Fil de Florence ligatures, previously soaked in warm water, are preferable to silk ligatures, in consequence of their flexibility.

2. Ligatures (silk, metallic, fil de Florence) left in the abdominal cavity are always covered by newly organized cellular tissue, either in the form of a small cylinder or roller (metallic, fil de Florence), or of a puriform capsule (silk), and are thus isolated.

3. The cornua uteri, deprived of nutrition by means of a ligature, and left in the medium of serous membranes, do not die away, but derive their nutriment by means of the cellular tissue covering the part.

4. The eschar on the pedicle of the cyst, left in the abdominal cavity, does not undergo a process of destruction, but is isolated by means of a capsule of cellular tissue attached to the neighbouring parts.

5. The abdominal wound heals sooner and more fully in such cases where the sutures traverse the peritoneum.

All these experiments are fully and clearly described in his classical dissertation, in the Russian dialect, under the title of "Ovariotomy, or Excision of Tumours of the Ovaries (Cysto-ovariotomy)."

The above-mentioned facts partly explain the fate of ligatures left in the abdominal cavity, as well as the changes to which the remaining portion of the cystic pedicle, severed off by means of a ligature or burnt off by the actual cautery, is subjected.

I shall now proceed to give a brief statement of the rules on the foundation of which I enter upon and perform the operation for ovariotomy,—an operation, so to say, originating with, and nurtured by the medical world of Great Britain.

I trust but little to preparatory treatment, consisting in the administration of tonics (preparations of bark, iron, etc.) prior to performing the operation. It is difficult to prove the efficacy of such a mode of treatment, either practically or theoretically; it is necessary but to remember that the nutrition of this class of patients, in consequence of the pressure exercised by the tumour on the viscera, and displacement not only of the abdominal viscera, but also of the organs of the thorax, and sometimes of compression of the abdominal aorta and other large vessels, falls to a degree of prostration. The nutriment of the tumour itself co-operates no less to emaciation. Some cysts are slow in their development, others very rapid; and the latter have the most distressing influence on the nutrition of the system, since, on the one hand, it cannot inure itself to the rapid changes in the position and functions of important organs, which take place in consequence of the rapid growth of the cyst, and, on the other, the organism has no time to make up for the loss of materials requisite for the nutriment of the cyst itself. In such cases therapeutical measures are, in general, powerless; and I cannot call to mind a single case in which the highly praised preparations of bromine, iodine, iron, quinine, etc., brought any evident relief. In those cases where the cysts are slow in their development, and have not as yet attained considerable size, the above-mentioned preparations may be administered with some benefit. In general, in cysts of large volume, where emaciation has attained a high degree, the time used in trying to strengthen the general system of the patient is, in my opinion, lost. Experience (cases 11 and 13) has sufficiently convinced me that patients, even greatly emaciated, bear the operation well, and, relatively speaking, recover rapidly.

Before deciding upon ovariotomy, I endeavour, as far as possible, to form an exact diagnosis by means of repeated explorations. In very doubtful cases I have recourse to probatory punctures; in order to decide the question concerning continuous adhesions of the cyst to the peritoneum, I propose a probatory incision of the abdominal cavity. The latter consists in opening the cavity of the abdomen in the direction of the linea alba, generally between the navel and symphysis pubis, by means of an incision not longer than three centim., for the purpose of introducing the finger for exploration, by means of which the character of the adhesion may be determined. Undoubtedly such a course, not unattended by danger, should be resorted to only in those difficult and exclusive cases where other methods of exploration lead to the suspicion of continuous adhesions of the cyst to the peritoneum. In some cases, having deferred ovariotomy, we have found, on post-mortem examination, continuous adhesions of such consistency as to render their removal impossible, even on the dead body; in others, similar adhesions were so feeble as to be easily separated with the fingers, proving thereby that ovariotomy was admissible. Such probatory incisions of the abdominal cavity are not, in my opinion, much more dangerous than punctures. In forming the diagnosis of a cyst, the following questions should be decided:—1. Is the tumour within the cavity of the abdomen effectively a cyst of the ovary? 2. Of what species is the cyst? 3. Its relation to and connexion with the abdominal and pelvic viscera. As to determining the length or shortness of the cystic pedicle, with reference to the success of the operation, is, at the present day, in my opinion, of no importance: the reason for this will be explained hereafter.

Other questions relative to whether we shall find a cyst in one or both ovaries—if the former, in which of the two—and a definition of the size of the cyst, are of little importance with reference to the successful performance of the operation. A definition of the thickness of the walls of the cyst and consistency of its contents is far more important; but the former is only possible on the extraction of the cyst, and the latter, although attainable in some instances prior to the operation, is far from being always precise.

However accurately the diagnosis may have been formed, the surgeon, in performing ovariotomy, should be ready for anything unforeseen. I am convinced that the differential diagnosis of cysts of the ovaries presents many more difficulties than the performance of the operation itself. The position of a conscientious surgeon is indeed difficult when, on laying open the abdominal cavity by means of a long incision, he is convinced that before him lies, not a cyst, but ascites, extra-uterine pregnancy, a fibroid of the uterus complicated with ascites, a hæmatocele retro-uterina; in a word, that the peritoneum has been fruitlessly laid open. That such instances are not unfrequent, the reader may convince himself by looking over the records of ovariotomy.

Another reason for the attention I would give to the diagnosis of cysts is, that all contemporary ovariotomists have concentrated their attention on the technical part of this operation. Without in the least reproaching them, I cannot, however, help remarking that the diagnosis of cysts has been but little investigated, and that instances of unfinished operations, without a minute explanation of the reasons that led to this, are not few in number. As yet we have no good description of the diagnosis of cysts.

The rectum and bladder should be emptied prior to entering upon the operation.

I divide the instruments and apparatus requisite for the operation into indispensable and provisory.

Indispensable.—1, a wide-bladed bistouri; 2, a pair of curve-bladed scissors; 3, trocar, No. 2; 4, two torsion forceps; 5, two or three Baker Brown's forceps for ovariotomy; 6, two or three Dieffenbach's small forceps for bleeding vessels; 7, Baker Brown's clamp; 8, two or three prismatic cauteries; 9, Masslovski's beak-shaped cautery; 10, forceps with pins, invented by myself, for holding the stem of the cyst while examining the eschar with regard to consecutive hæmorrhage; 11, two or three Startin's pins; 12, ligatures—silk, hemp, metallic, fils de Florence; 13, apparatus for dressing the wound—regular charpie, about 1 lb., a linen compress, a piece of flannel, collodion, tape; 14, chloroform, about ℥ii.; 15, ammonii liquidi, ℥i.; 16, clean sponge, up to twenty pieces, of various sizes; 17, warm water; 18, a brazier; 19, jars for reception of fluid; 20, towels; 21, nippers; 22, liquor sesquichloridi ferri; 23, ice; &c.

Provisory.—1, trocars, No. 1 and 3; 2, probe-pointed bistouri; 3, grooved sound for ovariotomy; 4, écraseur; 5, two or three different forceps; 6, Koeberlé's serre-nœud; 7, olive and prismatic iron.

Prior to the operation the patient, or at least her relations, should be warned of the danger of the operation. The latter is performed with the aid of chloroform; local anæsthesia can hardly be resorted to here. An experienced assistant puts the patient under the influence of chloroform in the room where the operation is to be performed, and when she begins to fall asleep, those who are to be present come in; or, the chloroform may be administered to the patient in another room, and when she is quite insensible she may be brought in. In general we bring on full anæsthesia, which is kept up only during the painful moments of the operation. The patient is placed on one of Langenbeck's tables, being the most convenient for the purpose. The operator places himself on the right side of the patient, and, in exceptional cases, between her legs.

The assistants are placed in the following manner:—

The first near the knife of the operator: on him lies the principal duty, he follows each movement of the surgeon, and fulfils all his orders, as—1, dries the wound during the incision of the abdominal walls; 2, places the ligature on bleeding vessels, adhesions, bundles of the omentum; 3, raises (if necessary) the peritoneum on its being laid open; 4, on the introduction of the trocar through the cystic walls he applies and ties the tape; 5, supports the cyst on its being brought out; 6, replaces the intestines or omentum in case they fall out, applies the sponge where necessary; 7, helps to apply sutures to the wound, to dress the latter, etc. He places himself on the left side, face to face with the operator; near him stands the surgeon's dresser, to whose care are left clean sponges, kept in hot water.

The second supports the abdomen from above. He is placed on the right side of the patient, near her chest, and places both palms of his hands on the abdomen, in such a manner that the thumbs lie above the naval, their extremities touching or overlapping each other, and the forefinger parallel to the linea alba. He retains the abdomen and cyst immoveable in a given position; this is especially of importance in those cases where the abdomen is not equally distended or the cyst is small. During the evacuation of the cyst, and especially during the extraction of the latter, he watches the falling out of the intestines, and should this happen, *immediately leaves hold and raises the edge of the wound*, and the operator or first assistant replaces the viscera. With the termination of the third stage of the operation his office finishes.

The third assistant supports the abdomen from below. He places himself on the left side of the patient, near the pelvis. His offices are seldom required during the incision of the abdominal cavity. In case of any serous fluid escaping on laying open the abdominal cavity, he collects it in a jar or on a sponge. During puncture of the cyst he collects the fluid that runs through the canula of the trocar; his principal office, however, commences when the first assistant is occupied in supporting the extracted sac of the cyst, with the rest of its contents; here he in some way fulfils the duties of the former.

The fourth superintends the instruments.

The office of the fifth assistant is to have the cauteries ready in time.

I divide the operation into five stages:—1, laying open the abdominal cavity; 2, evacuation and extraction of the cyst; 3, removal of the cyst; 4, application of sutures to the wound; and 5, dressing of the latter.

1. *Laying open of the Abdominal Cavity.*—Having fixed the place of the incision, by placing the thumb and forefinger of the left hand on either side of the linea alba, I cut through the skin with a wide-bladed bistouri, and then, by successive long strokes, divide the layer of fat, fascia, and linea alba. In laying open the peritoneum, a pair of forceps may or not be used; in the first case, having taken hold of the peritoneum by means of a pair of toothed forceps, I raise the former and make an incision in the direction of the wound, holding the knife flatwise; through this incision I introduce my finger, and by means of curve-bladed scissors, introduced along the finger as a guide, I widen the wound upwards and downwards; in the latter direction, I transfer the fingers of my left hand to the place where I intend to incise the peritoneum, press them against the walls of the cyst, and at the same time keep separating them from each other, whereby the cystic walls, on the one hand, disappear, and on the other, the peritoneum being distended, is readily divided by light strokes of the bistouri. A pair of forceps is necessary when the subjacent adipose tissue is of a certain thickness, or we have not succeeded in finding the linea alba. The peritoneum being laid open, the cystic walls generally protrude through the wound. The

length of the incision of the abdominal wall is at first from 10 to 12 centim., commencing below the navel and terminating within 5 or 6 centim. of the symphysis pubis. In case it may be necessary to widen the incision, I carry it to the left side of the navel. It is best to endeavour to penetrate into the cavity of the abdomen through the linea alba; for this purpose the incision should be commenced from, and be carried along, the left side of the navel, or, should it be present, along the coloured streak showing the direction of the linea alba. Hæmorrhage of the edges of the wound may be arrested by torsion of the vessels, ligatures, or by means of small forceps adapted for the purpose.

2. *Evacuation and Extraction of the Cyst.*—The purpose of evacuating the cyst is to lessen the volume of the latter, and thereby render its extraction easier through an incision, as narrow as possible, of the abdominal cavity.

The anterior wall of the cyst protruding through the wound is punctured by means of a trocar near to the upper angle of the former. The exit of the contents of the cyst through the canula is regulated by means of a cock; as the fluid flows out and the cyst is gradually evacuated, the point of the puncture changes place, and departing from the upper angle of the wound, approaches the lower angle, in consequence of the mobility of the cyst—which, doubtless, is not the case in adhesions of the latter to neighbouring organs, and especially to the abdominal walls. For this purpose I generally use one of the following curved trocars with cocks:—No 1 (diameter of canula = 4 mil.), No. 2 (diameter of canula = 8 mil.), and No. 3 (diameter of canula = 16 mil.) The length of the curved canula = 38 cent.; the triangular point of the stylet protrudes from 1½ to 2½ cent.

I prefer the above-mentioned trocars for the following reasons:—1*st*, The contents of the cyst escape much easier through their canulas than through short trocars with gum-elastic canulas; 2*d*, Having evacuated one compartment of the cyst, it is very easy to penetrate into the others, if necessary, without removing the canula of the trocar; and, 3*d*, These same trocars may advantageously replace all other instruments used for the purpose of extracting cysts.

During the evacuation of the cyst, I take care that the contents of the latter, passing the canula, do not escape through the puncture, and, in general, am very particular during the following stages of the operation that the fluid do not penetrate into the abdominal cavity. In cases of unilocular cysts, and especially where there is no suspicion of the presence of considerable adhesions, I let the whole of the contents run off. Where adhesions are suspected, before totally emptying the cyst, I convince myself of their presence by introducing one or two fingers, and sometimes half the hand, into the cavity of the abdomen. I then proceed to separate the adhesions, if possible—if not, I do so during the extraction of the cyst.

In multilocular cysts, and especially in those cases when, having evacuated one compartment of the cyst, there remain others of considerable size, I proceed to empty them, one after the other, without removing the canula of the trocar. This method has the advantage that the contents of the cyst do not escape into the abdominal cavity, which not unfrequently happens in evacuating each compartment of the cyst by means of external punctures. Internal puncture of the partitions or compartments of the cyst is very easily performed; the canula of the trocar inserted in the cyst is directed to the partition of the next compartment, and carefully kept in place; by means of the opposite hand laid on the abdominal wall over the same compartment, the operator feels whether the canula is in direct contact with the partition, and as soon as that is ascertained, the assistant introduces the stylet of the trocar, the cyst being immovably fixed, and punctures the compartment. The canula of the trocar should always be directed towards the cavity of the cyst inwardly, and not externally. If the canula of the trocar, in contact with the partition, slide along the latter, or the cyst be constricted, the above-mentioned method should not be resorted to; for should any of the convolutions of the intestines be lying in the groove of the constriction, they may be easily wounded, and on the removal of the canula, a free exit be formed into the abdominal cavity for the contents of the cyst (case 14). In case the fluid escape near the canula, it is best to raise the edges of the wound by laying hold of them with a pair of forceps.

Having evacuated the cyst of its contents, I proceed to extract the tumour, and at the same time to separate the remaining adhesions.

For this purpose I introduce the trocar, and puncture the anterior wall of the cyst from within outwards, and at a distance of from three to four fingers' breadth from the first puncture, raising the canula and tightly tying the fold of the cyst under the former, and thereby totally stopping the flow of the contents, and forming a sort of handle, by means of which the sac of the cyst is easily extracted, provided there be no adhesions.

Adhesions, should they be present, of the cyst, to neighbouring organs, are separated with the hand, or by the actual cautery or scissors; in the latter case, we apply ligatures (silk or metallic), and the adhesion is incised between the ligature and cyst. The écraseur has not proved to be quite convenient for this purpose.

Fresh adhesions, representing delicate, thin, whitish threads, are separated with the hand, keeping as near to the wall of the cyst as possible. In general, the operator, in removing adhesions, should be guided by manipulations very much like those used in removing the placenta. It will not be superfluous to remark here, that hæmorrhage not unfrequently ensues on removal of such adhesions, and during the rest of the operation should be attended to.

Compact, tape-like adhesions, in the form of false membranes of different length and breadth, and supplied with no apparent vessels, that do not yield to the fingers, are separated by means of a pair of scissors, or the écraseur.

Vascular and continuous adhesions of the cyst to the omentum, demanding the removal of more or less of the latter, are the most important. In such cases, we destroy the adhesions by means of the actual cautery, or apply ligatures (silk or metallic) with short cut ends, and leave them in the abdominal cavity (*ligature à fil perdu*), or in one and the same case, we resort to both the one and the other. In some cases, in order to arrest hæmorrhage, it is necessary to apply, temporarily, ligatures, Dieffenbach's forceps for bleeding vessels, or Baker Brown's forceps for ovariotomy, and to resort to the application of the actual cautery to the adhesions only on complete removal of the cyst. The only thing that can be said, in speaking in a general way of the removal of vascular adhesions, and of a portion of the omentum, is, that the actual cautery should be preferred to ligatures. The application of the actual cautery stands in close relation to the question whether it be possible to apply the clamp to the adhesions, and protect the subjacent organs, as also the hands of the assistants, from the red-hot iron, and the consecutive heating of the clamp. Baker Brown's clamp fully answering the purpose of cauterization of the cystic pedicle, although the compression exercised by it on the latter be not uniform, is far less convenient for burning off adhesions. Experience may perhaps prove Dr Masslovski's clamp more advantageous for this purpose. The rules for applying the clamp to adhesions are the same as those, hereafter to be stated, for cauterization of the pedicle.

The cyst is evacuated entirely of its contents in those cases where we suspect no adhesions, or the latter are not considerable; on the contrary, where the adhesions are considerable, the cyst should not be totally evacuated, as otherwise the removal of the former is thereby rendered more difficult.

In some cases, the cyst has one or two compartments of considerable size, while the rest consists of small congregated cysts, forming a compact mass, which it is impossible to make smaller. Puncture of the cyst does not consequently always answer for lessening the cyst to a certain degree; on evacuating the cyst, it is therefore not unfrequently requisite to enlarge the wound by means of a pair of scissors or a bistouri, introduced along a grooved director.

Extraction of the cyst is performed in the following manner:—Laying hold of the above-mentioned handle (the trocar), we extract the sac of the cyst, facilitating its exit from between the edges of the wound by means of the other hand.

Extraction of the cyst is rendered more difficult—1. Through friability of the cystic walls, in consequence of which they give way, either in the place of the puncture, or of the ligature; 2.

By the considerable size of the compact part of the cyst remaining in the abdominal cavity, adhering sometimes to the liver (case 11), peritoneum, omentum, or mesentery. In such cases, I introduce my hand into the abdominal cavity, separate the adhesions, and by compatible manipulations, having laid hold of the handle, endeavour to extract the cyst. It has happened that the cystic walls have begun to give way under the fingers; I have then entered the cavity of the cyst, and having laid hold of its compartments, have extracted the tumour.

Leaving the extracted cyst to the care of the assistant, I proceed to determine the state of the uterus and other ovary.

When the considerable size of the extracted sac, with the rest of the contents or congregated cysts, embarrassed the following stage of the operation, the pedicle was compressed in the écraseur near to the wall of the cyst, and cut with a pair of scissors; in this way, the actual cautery or ligature were applied to the pedicle on preliminary removal of the cyst.

3. *Removal of the Cyst.*—For final removal of the cyst I prefer two methods—1. Cauterization of the pedicle with the actual cautery; and 2. Application of ligatures (silk or metallic) with short cut ends (*ligature à fils perdu*). To the latter I resort only in those cases where, in consequence of the shortness of the pedicle, the actual cautery cannot be applied.

The application of the actual cautery to the pedicle is accomplished in the following manner:—The pedicle is compressed in Baker Brown's clamp within no less than 2½ centim. from the wall of the cyst. In order to avoid burning the general integuments, wet charpie is laid underneath the lower surface of the clamp around the pedicle. The part of the pedicle above the compression is bent over the movable plate of the clamp, and is burnt off by means of a piece of prismatic iron, heated red-hot. For the latter purpose the cautery is applied to the edge of the plate, and the pedicle gradually burnt off by slow saw-like strokes along the former.

Cauterization of the pedicle is sometimes attended by considerable hæmorrhage of the cystic vessels; and in such cases the place to which the cautery has been applied should be dried with a sponge. Having burnt off the pedicle, the cyst is removed.

The eschar is of a dark brown colour, presenting on its surface several small dotted yellowish circles—the vessels. The latter are cauterized with the beak-shaped cautery.

When the clamp is sufficiently cool, it is slowly opened, and the lint removed. Should hæmorrhage of the eschar ensue on removing the clamp, the latter is immediately closed again, and the mouth of the bleeding vessel cauterized with the beak-shaped cautery. In order to be more fully convinced of the absence of hæmorrhage of the eschar on the removal of the lint, we introduce a pair of forceps with pins under the clamp, and the eschar is thus retained on the surface without compression of the cystic pedicle.

In letting the pedicle sink into the pelvic cavity, care should be taken that the continuity of the eschar be not destroyed. If necessary, the cyst of the other ovary is removed in the manner just described.

The chief defect in Baker Brown's clamp is, that it cannot be employed in cases where the pedicle is very short—less than two centim. In such cases we resort to Dr Masslovski's clamp, the merits of which, in consequence of the few experiments that have been as yet made with it, we shall not enter into.

In seven cases the pedicle of the cyst was cauterized according to Baker Brown's method; of these, in three cases of ovariotomy of both ovaries, and in two in burning off of adhesions. Notwithstanding that, in some of these cases, the pedicles were very rich in fully developed vessels, hæmorrhage never ensued, either from the eschar or the pedicle left in the pelvis, or the adhesions.

I have a preparation of a uterus with the surrounding parts, taken from a patient (case 15), in which the vessels leading to the pedicle, and dissected by Dr Merjéevski, are not injected, and are seen to have been as thick as a crow's quill. On the same preparation the vessels may be seen to be obstructed, and the shrivelled end of the obliterated vessel to contain a firm plug two inches in length.

The results obtained by Baker Brown and myself in performing ovariotomy, and the experiments on animals made by Dr Masslovski, speaking in favour of the patients being guaranteed from hæmorrhage of the eschar, all the advantages are therefore undeniably on the side of this method of final removal of a cyst out of the organism.

I resort to ligatures with short cut ends in exceptional cases, as has been already stated, when the actual cautery cannot be applied in consequence of shortness of the pedicle or continuous adhesions to the uterus.

Having let the pedicle sink into the cavity of the pelvis, we apply ourselves to removing any accumulation of serous fluid or blood in the abdominal cavity by means of clean, soft, tepid sponges. In general, during the whole of the operation, care should be taken to avoid, as far as possible, so to say, dressing the peritoneum. The contact of the sponge with the latter causes excessive pain if the patient is not under the influence of chloroform. At the same time, the contact of air with the peritoneum should be avoided. In general, the less the hand is introduced into the abdominal cavity, the more seldom we open the wound, the more delicate and shorter the dressing of the peritoneum, the greater the hopes for the successful results of the operation.

4. *Mode of applying Sutures.*—The most convenient mode of applying sutures is that of Baker Brown's, by means of Startin's

pins. In general, according to the length of the wound, I apply from two to five deep (through the peritoneum) and several superficial metallic knotted sutures. The rapid closing of the wound gives this method advantage over all others.

5. *Dressing of the Wound.*—I prefer Koeberlé's dressing.

(*To be continued.*)

ARTICLE VI.—*On the Urinary Pigments.* By HENRY VEALE, M.D., Royal Artillery.

THE plans which are ordinarily recommended for examining the urinary pigments are either very troublesome, or of such little practical value as to be but seldom had recourse to by the clinical physician. The method recommended by Dr Payne (*Indian Annals*, Sept. 1858) was to boil a certain quantity of urine in a test-tube, and then to treat it with nitric acid, drop by drop. By this proceeding, the urine usually becomes darker with each addition of the acid until a maximum of colour is produced; after which, if more acid be used, the changes are retrogressive. Dr Payne was of opinion that, in cases of hepatic disease, the colour thus produced was always much darker than in health. In my hands, however, this has not constantly been the case. In inflammatory diseases of the liver, I have frequently observed exactly the reverse; and notwithstanding many trials, I have been unable to determine that Dr Payne's method is of any diagnostic value.

The simple proceeding of Heller and Carter of allowing a certain portion of urine to mix slowly in a test-tube with a smaller quantity of sulphuric or hydrochloric acid is of more value. I have not, however, been able to obtain sufficient uniformity in the results from the use of either of these acids. As tests available at the bedside, they are decidedly inferior to the strong nitric acid when properly employed.

Dr Andrew Clarke of the London Hospital has shown that there is no better mode of testing for small quantities of albumen than that of allowing a small quantity of urine to trickle slowly down the side of a test-tube upon about a half a drachm of fuming nitric acid. I have employed this test extensively, and fully agree with all that Dr Clarke has said as to its certainty and simplicity. I had not used it long, however, before I was struck with the difference in the appearance of the pigmentary band. By this term I mean the coloured rings which form at the line where the urine floats upon the acid. The quantity of nitric acid employed should always be sufficient to reach the portion of the test-tube, which is uniform in calibre. If the acid be poured into the tube on one side, the urine should be allowed to trickle down only on the opposite; and it will be found convenient to use a pipette for letting the urine flow into the tube. If more than a drop or two runs down at once upon the acid, there is apt to be a mixture of the fluids, which spoils the experiment. Inclining the tube at an angle of from 50 to 60 degrees, or even more, much facilitates the operation, but in restoring the tube to the vertical position care must be taken not to agitate the contents. To see the result, the tube should be held in a certain light, and generally it will be best to have a white background, such as a whitewashed wall or a sheet of white paper.

If the experiment has been properly performed, there will be found, when healthy urine has been employed, a yellow ring at the line of contact of the two fluids, and over this a narrow ring of an almost ruby-red colour. In many scores of observations, I have not yet met with an exception to this rule. In certain morbid states of the system, however, instead of the ruby ring, the urine strikes a purple, bluish, or absolutely blue ring. When bile is present, there is also a green ring. These coloured rings are produced immediately, and are at first very distinct, but they gradually cease to be visible as the mixture of the urine and acid progresses.

In the intermittent and remittent fevers of India the urine will frequently display the purple and blue rings. In nearly every case of dysentery that has come under my observation since my attention was drawn to this subject, I have found a decidedly blue ring to be produced so long as the disease was progressive, and the ruby-red ring to reappear when the patient began to recover. I have not often seen a blue ring in cases of congestion and enlargement of the liver, unless there happened to be some other concomitant state, such as fever or diarrhœa, to which it might be ascribed. In a case of enlarged liver, anæmia, and consequent functional cardiac disorder, attended with much debility, which came under my notice some months ago, there was no movement of the bowels for six days, notwithstanding several doses of colocynth pill, calomel, and julep, castor-oil, etc. On the sixth day of the constipation, I prescribed one minim of croton oil, which occasioned one motion after the lapse of several hours. I then ordered the dose to be repeated, and the result was, that within the ensuing twenty-four hours the bowels were moved eight times. After the eighth motion, I examined the urine in the manner above described, and found a distinctly blue ring to be struck over the yellow. During the next twenty-four hours, there was no movement of the bowels, but the urine still presented the same appearance. On the third day the bowels were still constipated: the urine, however, no longer displayed the blue ring. On the fourth day, after a dose of pil. aloes and myrrhæ, the bowels were moved eleven times; the pigment then became of a dark purple colour, but not distinctly blue. From this time he improved, and the blue and purple rings ceased to be produced. From this case it would appear as if even artificial purgation were sufficient to induce the change in the condition of the urinary pigment.

This blue or purple pigment is of course no other than the uroglaucin of Heller, or the indigo-blue of Carter and Schunk; but although it may be possible, as the latter authors have shown, to obtain this substance from nearly every specimen of normal urine, it would be erroneous to conclude that the almost instantaneous formation of the blue ring, when urine and nitric acid are brought into contact in the manner above mentioned, is a normal or physiological change. Up to the present time, I have never seen it produced in the urine of healthy persons. As a temporary symptom in the course of a malarial fever, I have not observed it to indicate danger to life or the reverse; but in all cases hitherto in which it has been detected day after day, where it has been persistent, in short, the disease has taken a downward course.

Judging from the nature of the cases in which this condition of the urine is found (dysentery, severe malarial fevers, excessive purgation, etc.), I think it may be concluded that it is in direct relation with the amount of destruction or loss of the colouring matter of the blood, and with the inability of the system to repair the waste at the time. Under normal conditions, it would appear that the supply of colouring matter to the blood somewhat exceeds the waste, but that, in certain diseases in which the loss of colouring matter is excessive, or in which the supply of the requisite materials cannot be duly profited by, there is an interruption in the process of pigment formation, which probably essentially consists in an insufficient amount of oxidation. Whatever may be the true explanation, it is to be hoped that those who are practising in cold or temperate climates, and who have to deal with diseases of a different kind from those usually witnessed in India, will give to the profession the result of their observations on this subject.

ARTICLE VII.—*Notes of Thirteen Cases of Delirium Tremens.* By M. THOMAS, M.D., formerly Medical Superintendent of the Barony Parochial Asylum and Poorhouse, Glasgow.

THE following cases of delirium tremens here detailed were treated principally by means of tartar emetic. I was induced to adopt the use of this medicine by having observed its almost marvellous effect in a case which came under my observation whilst house-surgeon of the Greenock Infirmary in the year 1856. The case was sent in by Dr James Wallace, who had at that time the charge of the medical and surgical wards. The patient, a gentleman from England, exhibited all the symptoms of delirium tremens; and various remedies were tried upon him fully and fairly without the slightest benefit. Having exhausted every other remedy, Dr W. resolved to give tartar emetic in $\frac{1}{4}$-grain doses, as advocated by Dr Peddie of Edinburgh; and the patient, who, previous to its administration, had shown no symptoms of amendment, fell asleep after the second dose, and, sleeping soundly for about eight hours, awoke perfectly recovered. The favourable impression then left on my mind has not since been eradicated by its further use; but the conviction has been strengthened that this medicine is a most potent weapon with which we are able to cut short in its career the course of this particular disease. I will now relate the cases which have come under my own observation.

Case I.—Whilst acting for Dr Carleton at Kilsyth in the autumn of 1857, I was sent for to see a farmer in the neighbourhood, named J. P. I found him in bed complaining of anorexia and general lassitude; his tongue was loaded and moist, skin cool, and pulse calm. On reaching forth his arm for me to fell the pulse, I observed a peculiar shaking of his hand, and questioning both his sister and himself, I found he had been drinking heavily for some time previous. The symptoms not being very urgent, and his bowels being confined, he was ordered a purge, and instructions left that no stimulants be given him. Next morning he was much the same, and the tongue still being loaded, the purge was repeated. In the evening I was sent for, and found he had become restless, and was talking in an incoherent manner. The cause of this change was properly attributed to some whisky he had hid under his pillow, and of which he had partaken when alone. The remainder was immediately removed, and quarter of a grain doses of tartar emetic in solution administered. Next morning he was greatly better, and continued so during the whole of that day; but on the succeeding morning I found he had relapsed, having terrified his sister, who was his only attendant, by his threats to give him more drink. Busy delirium had now set in, as he was searching all the walls and the corners of the bed, whilst his hands were trembling very much. The medicine was continued, but its effect was neutralized by the whisky, which was also continued at the same time,—the sister who was left alone with him all day, being afraid to refuse it. Next day I handed over the patient to the care of Dr Carleton, who had now returned, and I heard no more of the case, except that after some time he recovered under the old plan of treatment by stimulants and opium, of which Dr C. was a staunch advocate.

Case II.—The next case is that of a woman, æt. 35, who was admitted into the hospital of the Barony parish on the 7th May 1859. My notes of this case are imperfect; but she is represented as being on the verge of delirium tremens,—was very troublesome for two nights after admission, but was perfectly recovered on the next day after the use of the tartar emetic solution.

Case III.—A. F., æt. 40, a mechanic, and a fine intelligent looking man, was admitted into hospital on the 20th January 1860. He had been drinking hard ever since the New-Year's holidays, and on admission presented the following symptoms:—Is very suspicious, constantly looking about as if afraid he was going to be injured. Hands display the usual tremor, pulse soft and calm, tongue covered with a brownish fur, skin cool, and bowels confined. Was ordered a purge that evening. 21*st.*—Did not sleep well, but all night was constantly endeavouring to escape from the ward both by windows and door. Whilst I was standing at the fire speaking to him, he suddenly seized the poker, intending to clear his way to the door, but was easily subdued. Solution of tartar emetic was now ordered; but before receiving the medicine, he, eluding the nurse, suddenly ran out of the ward, and, getting to the stair, jumped over the window, and in his fall fractured the fibula of the left leg. He was immediately conveyed to a separate apartment, and fomentations applied to the leg; but these he would not allow to remain on, as he continued to get out of his bed and attempt to get away, being insensible to the pain of his leg. The medicine was now given to him every hour, and after the fourth dose he fell asleep about 1 A.M., and when he awakened in the morning he was quite recovered. The usual treatment for the fracture was then followed with a satisfactory result.

CASE IV.—On the 4th May 1860, J. S., æt. 37, was brought from the police-office and admitted into the probationary ward of the poorhouse, to see if the excitement under which he was labouring would pass off. This not occurring, he was removed to the asylum on the day after, where, owing to his extreme restlessness by day and night, disturbing the other patients in the sick ward, he had to be removed to one of the single rooms, where he speedily recovered under the use of the tartar emetic.

CASE V.—W. M'B, æt. 35, was admitted into hospital on the 23d May 1860. This man I had known for years to be an inveterate drinker, and to have had more than one attack of delirium tremens. On the present occasion, after a severe debauch, he had attempted to commit suicide by walking into the Clyde, from which he was rescued and sent here. He was very restless, and did not sleep well; and, on account of the annoyance he caused the other patients, and there being no proper accommodation for the treatment of such patients in the hospital, he was transferred to the asylum, and was there treated with solution of tartar emetic. During the night he rested well, and at the morning visit was found quite sensible and coherent. I may add that, since his dismissal, he has reformed wonderfully,—so far as drink is concerned,—dresses respectably, instead of hanging with rags as before, and is now a member of the church.

CASE VI.—Admitted into hospital, on the 30th July 1860, a female named J. D., æt. 38. Previous to admission had been drinking freely, and was, when seen, in that condition commonly known as the "horrors." The morning after admission was reported to have slept none, but walked about the ward the most of the night, and attempted to jump out of the window. A purgative was immediately ordered, and thereafter, being put on full doses of tartar emetic, sleep was induced, and on the morning of the third day after admission she had quite recovered.

Case VII.—D. A., æt. 43, an engineer and spirit-dealer, was admitted into the asylum on the evening of the 11th November 1861. Previous to admission he had been labouring under delirium tremens for nearly three weeks, and he has had several attacks of the same disease. On admission, there was general tremor, delusions, with great terror and anxiety. Pulse calm, tongue white and loaded, bowels confined, and great thirst. A purge of black draught was immediately given him, and lemonade allowed for drink. 12*th November.*—Did not sleep well, but was constantly getting out of bed, and attempting to reach the gas, and at last became so very troublesome as to require removal to a special room. 13*th.*—Is still very troublesome; ordered to have the usual tartar emetic solution. 14*th.*—To-day is quite well.

Case VIII.—On the 22d January 1862 this patient was readmitted into the asylum, again labouring under delirium tremens. His symptoms were much as before,—great restlessness and excitement, and running after all sorts of objects, which he fancied he saw before him. Under the date 27th January I find the following entry in my journal:—"After having slept none for three days and nights, and having become more noisy and excited, without any prospect of subsidence, he was put upon a mixture of tartar emetic and opium; slept well after three doses, and on the morning visit was found to have completely recovered.

Case IX.—A. M'P., æt. 21, admitted to asylum 24th July 1861. Being from home, I did not see the patient until the evening of the 26th, from which day the report dates. He had been brought from the police-office, and had been six days ill previous to admission. The cause of his illness was drink. Both before and after admission he had been very violent, tearing off his clothes, and abusing his private parts so much as to cause orchitis of the left testicle. He has a wild and furious appearance, is very restless, and fancies he sees objects about him. Eyes suffused, face flushed, tongue brown, but moist, and bowels said to be open. On account of his violence he was in seclusion when I saw him, with his hands muffled to prevent him abusing himself; and he had been ordered a mixture of antimony and opium, but it was imperfectly administered on account of his obstinacy. As he was strong, and labouring under great vascular excitement, a smart purge of two drops of ol. crot. was given him. 27*th.*—Medicine operated freely; though still somewhat excited, is quieter, and more conversable and sensible; and accordingly the muffs were removed from his hands, and he himself placed in the sick ward, where fomentations were ordered to the scrotum. *28th.*—Inflammation of scrotum greatly subdued, and may get up to-day. Habeat haust. ol. ricini. *29th.*—Would not take the castor-oil; but ol. crot. was got in lieu of it, and operated freely. Delusions quite gone; but has a suspicious and cunning look about him. In a few days more he was quite well, and was shortly afterwards discharged.

CASE X.—J. S., already mentioned as having been admitted into the asylum, was admitted into hospital on the 10th July, 1862. On this occasion he was not very bad, with the exception of the first night of his admission, when he was slightly restless. He was just withdrawn in time from his favourite stimulus, otherwise he would soon have become delirious. On this occasion the only treatment requisite was regulating the bowels and preventing the use of alcoholic stimuli. He was soon better.

CASE XI.—W. F., æt. 41, was brought from the police-office to the asylum on the night of the 3d September 1862. This was altogether the most violent patient I ever saw in delirium tremens, and one over whom no moral control whatever could be obtained. He was reported to have been delirious for three or four days previous to admission. He had lately come from Tain, and during the passage had been drinking deeply. This was not his first attack; but his wife, who had formerly been able to manage him at home, had never seen him so violent as on this occasion. As his roars and shouts in the waiting-hall were tremendous, he was put immediately into one of the seclusion rooms, where he continued shouting and raving upon polemical subjects during the entire night. Until the 5th he continued the same, taking no food during that time; but on that evening, his bowels being confined, a smart dose of black draught was given. On the 6th, the medicine having operated freely, he was better, and in a few days afterwards was dismissed.

CASE XII.—S. O., æt. 41, a female, was admitted into the asylum on the 29th March 1862. Previous to her admission she had been in what was described as an insane condition for eight days. Her husband had but recently died, and both before and after his death she had been indulging in drink. On admission, she was restless and sleepless, had delusions of a hysterico-erotic nature, and was frequently asking for brandy. Her tongue was loaded, pulse calm, skin cool, appetite bad. Had a former attack about eighteen months ago. As her symptoms were not very urgent, it was thought advisable not to give her any medicine, except an occasional purge to act upon the stomach and liver, thinking that she would soon recover; but after waiting two days, and finding her symptoms not any better, she was, on the 1st April, put upon the solution of tartar emetic. *2d.*—Slept well for the first time since admission; conversation quite rational. *3d.*—Is quite recovered. She was kept in the asylum for a few days longer, and having had no relapse, was shortly afterwards discharged.

Case XIII.—During the month of January of this year I was called to see a patient, in order to certify his fitness for the asylum. He was a tall strong man, had formerly been a soldier, but at present was in the employment of one of the railways in Glasgow. He had been drinking from the beginning of the year, and had been labouring under delirium tremens for a week before I saw him, and had been treated with digitalis. As he was getting no better, however, and as his lodging mistress was not able to restrain him during the day, it had been resolved to remove him to the asylum. When I saw him, he had decided tremors; but as his conversation and conduct were quite correct, it was impossible to certify that he was insane. I accordingly recommended him to be kept at home, and proceeded to treat him with tartar emetic. I found that during his previous treatment he had been continuing to take whisky, but this was now put a stop to. The tartar emetic was given to him every hour, but he slept none until the third day after the medicine had caused slight sickness and vomiting. During all the time of its use it had caused no purging, showing the tolerance of the drug which the system in this condition admits of. After having once slept he was quite well, and showed no desire for any stimulants after his recovery.

On reviewing the above cases, it will be found that all of them presented unmistakeable symptoms of delirium tremens. In some the symptoms, though decided enough, presented nothing unusual; in others they were much more marked, as in the case of A. F., who jumped over the window and broke his leg; whilst in the case of W. F. they culminated in uncontrollable madness. All of them had this malady ascribed to drink, and all of them had the characteristic tremor more or less marked according to the severity of the other symptoms. And I would here notice that, during an experience of upwards of six years as medical superintendent of the Parochial Asylum and Workhouse at Barnhill (having under my charge never less than 150 lunatics and a thousand paupers), into which establishment are drafted all the most difficult or troublesome cases occurring amongst the labouring and poorer classes in the Barony parish of Glasgow, which has a population of over 177,000 persons, only 7 cases of delirium tremens were admitted into the asylum, and 4 into the hospital of the poorhouse; and of the whole 11 cases, 2 had been admitted twice, making therefore a total of only 9 persons, or 1 case of delirium tremens in every 20,000 of the population—showing that hard or continued drinking is not a sin of the working classes of the present day; for otherwise the parochial establishment would have felt it, from the inability of those classes to treat such cases in their houses. And I would further remark that, in an asylum, or any other place analogous to it in construction and arrangement, this disease is treated much more successfully and quickly than in the houses of the patients. In the asylum there is a control exerted over them which I have never found exercised satisfactorily by friends; they are also deprived of every opportunity of obtaining their favourite stimulus, and instead of being confined to bed or in a dangerous room, where they might easily and unexpectedly throw themselves out of the window, which terror arising from their fancies would make them do, they are allowed to walk about in the airing courts, or, if necessity compels, they are confined in a safe and commodious room, where they can neither injure themselves nor annoy others. In the case of J. P. at Kilsyth, for instance, the recovery was considerably delayed by the want of moral courage in the nurse, his sister; and I have found the same thing occur in other cases which I have attended in private practice. The services of a private nurse might obviate this objection, but it is not every one who can afford them, and frequently they are of no use from the want of proper training.

As for the medical part of the treatment, I have usually adhered to the administration of tartar emetic, and have had no reason to be dissatisfied with its results; but it must be given in large doses, such as a quarter of a grain or upwards, for in smaller quantities it has no perceptible effect. This treatment has only varied in the case of W. F., who was so violent that it was scarcely safe to approach him; but to whom, at a seasonable opportunity, a smart purge of black draught was administered, which helped to allay his excitement. This might be called a case of acute mania, but it was brought on by drink, and he had other attacks previously, though never so bad as this one. In conclusion, my own opinion as to the best method of treating delirium tremens may be thus summed up,—removal from friends, careful nursing, and abstention from alcoholic stimuli, unless the patient is very weak indeed; and, under these conditions, there are few cases which will not yield readily under the use of tartar emetic.

Part Second.

REVIEWS.

Mental Pathology and Therapeutics. By W. GRIESINGER, M.D., Professor of Clinical Medicine and of Mental Science in the University of Berlin, etc. Translated by C. LOCKHART ROBERTSON, M.D. Cantab.; and JAMES RUTHERFORD, M.D. Edin. New Sydenham Society.

IN discussing a book like that of Professor Griesinger, it would be mere waste of space and time to endeavour to give a *resumé* of the various subjects of which it treats; such information can be gained by a perusal of the table of contents; it is with its leading principles we have to deal, and this can best be done by considering its bearings on metaphysics, the classification, ætiology, pathogeny, and pathology of mental diseases, and the relative importance attached to each.

It is published as a text-book, by which the student may be able to obtain such a knowledge of insanity as may guide him in his diagnosis and treatment of that phase of disease. Wherein it has succeeded in this, and how it stands comparison with our English text-books, it is proposed to speak more particularly.

Like Dr Maudsley,[1] Professor Griesinger attaches a high degree of importance to the metaphysical consideration of the subject, but his metaphysics are by no means so easy of apprehension as those of the English author. Holding that "all mental acts take place within the intelligence," he is opposed to Maudsley's principle that "consciousness is not co-existent with mind;" and although the chapter on "preliminary physio-pathological observations on mental phenomena" is ably and ingeniously argued, it does not succeed in convincing the reader of the truth and correctness of the premises in the same manner as the other author's chapters bearing on the same subjects. The difficulty of grasping the author's meaning is enhanced by the imperfections of translation of this portion, more particularly, of the work; the length and involution of the sentences weary the brain before the eye has reached the final colon. It would be most interesting to consider the teachings of the two schools side by side, but this must be delayed to a future notice.

The original work was first produced in 1845, and a second edition was published at Stuttgart in 1861, the translation of which is now before the public. In the January number (1867) of the Journal of Mental Science appeared an admirable translation of an "Introductory Lecture read at the opening of the Clinique for Nervous and Mental Diseases in the Royal Charité in Berlin, 1st May 1866, by Professor W. Griesinger, M.D." It is instructive to observe the change which has taken place in the workings of a thinking mind. In the book of 1861 metaphysics stand foremost as the guiding principle—the first 113 pages are devoted to these specially, and they permeate the volume to its close. In the *lecture* appear the following cheering lines:—"It has been supposed, up to the present time, that the study of mental disease was distinguished by some difficulty *sui generis*, and that the study of ordinary medicine had no direct bearing upon it—that the only entrance to psychiatry lay through the dark portals of metaphysics. And yet the other cerebral and nervous diseases which, with the so-called mental diseases, form an inseparable whole, have not, so far as I am aware, been much elucidated by metaphysics; and in Germany the time has quite passed away when pyschiatry could be developed from a specially philosophico-psychological point of view. Ætiology, diagnosis, prognosis, and therapeutics, are the departments in which we must seek both our work, and that being successfully accomplished, also our fame." Surely the *magnum opus* has acted as an emunctory. In the lecture the position taken up is, "that diseases of the nervous system form one inseparable whole, of which the so-called mental diseases only embrace a certain moderate proportion." Although the great propriety of so regarding mental diseases is most cordially granted, it is not necessary to admit the novelty of the idea. Reference to any of the later English authors on this subject will show that this proposition has been fully insisted on. By Maudsley, for instance, it has been most thoroughly worked out.

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[1] The Physiology and Pathology of the Mind, by Henry Maudsley, M.D. Lond., Macmillan and Co., 1867.

But it is not the lecture that is to be our text, but the text-book; and as has been said already, in it metaphysics are put forward far too prominently. However alluring it may be for the student to form his own theory, or to follow in the wake of those who propound impalpable and not the less seductive principles as to the psychical changes in the insane, it is very much more than doubtful whether it will lead him into the proper channel by which to arrive at a practical knowledge of his subject. The changes in the mental life of the insane are, and must for ever be, a mere matter of theory; were a thousand put forward, they would take root just as they find minds ready to receive them. As chess-players say of a doubtful move, "they are pretty, but won't stand," according as each mind is directed to king, queen, knight, bishop, or pawn, as the master of the position. Metaphysics can never make the student look upon insanity as a disease; they lead away from it, and have no more right to form a part of a text-book on insanity than a dissertation on the Fall of Man as the grand *origo mali*.

By the time the student is prepared to enter on the study of insanity, he has gained a general knowledge of metaphysics as much by experience as by reading; he is able to differentiate between volition and sensation, he appreciates the distinction between the moral and intellectual faculties, and the groove of thought which has led him on to arrive at this amount of knowledge has concentrated in his sensorium a sufficient supply of theory for all practical purposes. Lead him further on into the mysterious, and he is wiled away from the hard facts of pathology and physiology towards the immaterial. The value of metaphysical reading to certain minds is not called in question, the intellectual exercise is most gracious to some few amongst us; but in the ordinary work-a-day world, who or what is guided by it? In a book treating on insanity, such study induces the student to stray away into the desert of argument, where he wanders in endless circles, instead of guiding him towards the oasis of more certain sciences. When a man has gained a practical knowledge of the subject—when he is able to connect certain physical conditions with certain psychical abnormalities—then, if he wishes, let him theorize on the change in the "concrete ego." To our mind the preliminary part of Professor Griesinger's book should have been the ultimate.

For all practical purposes, Tuke and Bucknill's Text-Book is ahead of Griesinger's (Dr Maudsley does not put forward his work as a text-book); it begins at the beginning, and ends at the end of what was then known about insanity. Pritchard and Esquirol have never been surpassed in vivid description or practical teaching. True, they have all in practice, although their theory is different, adopted psychology as a basis of classification, in that they have taken (less or more) the mental condition of a patient as the groundwork for a nomenclature of his bodily malady. And in this we see the abuse of metaphysical inquiry. Writers, up to the time of the publication of Tuke and Bucknill's work, were content to admit the relation of certain natural groups of mental disease, according as they stood related to certain acknowledged abnormal bodily conditions—for instance, epileptic insanity, senile insanity, puerperal insanity, etc.; but later authors, allured by the charms of metaphysics, and viewing their subject by that most uncertain light, cannot discern the outlines of those forms which their predecessors had begun to trace out. These specific classes are lost in the maze of "general ideational insanity," "maniacal perversion of the affective life," and such like; and so matters will go on until authors reduce their theory to practice, by giving physiology and pathology their proper place as a groundwork of classification; we will be overwhelmed by nomenclatures, no doubt very sweet to the ear, yet *vox et prœterea nihil.*

Before passing to the consideration of what is really valuable in this work, we would direct attention to its system of classification. There is nothing new in it, except that general paralysis is not accepted as a form of insanity, only as a complication. The author begins his book by boldy stating that the "symptomatological" method is the only one by which a classification can be effected. Ætiology is thrust aside as absolutely useless and unworkable. In the far-off future he seems to see a chance of establishing an anatomical system, when knowledge has so far advanced as to enable us to point to the particular portion of the brain which is diseased. Accordingly, he reiterates much of the old story about melancholia, mania, and dementia. Now, if we do not labour under a very sad misapprehension as to what is intended to be conveyed by the names of these "forms of mental *disease*," we take it for granted that such and such names are meant to enable a physician to convey to others his idea of the malady under which his patient labours. If not, *cui bono?* Any one accustomed to the treatment of insanity can, by running his eye over this table of "forms of mental disease," recall cases where a patient has passed through almost all, or even all of them. For instance, a case may begin with "hypochondriasis," which rapidly passes into "melancholia," either in a "more limited sense," or "with stupor;" it may subsequently be characterized by "destructive or suicidal tendencies," or with "destructive and murderous tendencies," and lapse into "melancholia, with persistent excitement of the will." How frequently does "mania" supervene on melancholy, and degenerate into "chronic mania" and "dementia." And here we have all the forms of mental disease, with the exception of idiocy and cretinism. Such cases are not very rare—in general paralysis, for instance, and, as often, in senile insanity. By the time the patient has gone through all these phases, what is his case? The only name we can suggest is "polyglot insanity," the study of which is likely to act as a direct cause of "general ideational insanity." Only imagine telling a general practitioner that his patient suffered from "melancholia in a limited sense;" we doubt that he would feel inclined to reflect where the limited sense existed.

At page 73, it is well said,—"It is wrong to base a distinction of forms on the fact of the insanity being partial or general." This passage, however, reads curiously contradictory in connexion with the proposal to consider "melancholia in a mere limited sense,"[1] "melancholia with stupor,"[2] "melancholia with destructive tendencies,"[3] etc., as *definite* forms of insanity. It occurs when speaking of monomania, to which name great and just objection is taken for the above and following reasons:—"The establishment of a class, monomania (in opposition to mania), which related less to the existence of a single fixed idea than to the one-sided dominion of a particular impulse (monomania of murder, of theft, etc.), by setting aside the most important relations, namely, the fundamental mental state, has united what is outwardly distinct, and separated what is internally united: it is not, therefore, to be approved of" (p. 74). How are we to reconcile this opinion with the fact that monomania, at page 503, is accepted as a "form," and that the sixteen following pages are devoted to its discussion?

The only reason assigned for not considering general paralysis as a form of insanity is, that its serious disorders of sensation and movement constitute a part of the history of the insanity (!), and are therefore formally separated from it, in order that they may be studied more in detail. Would it not be more in accordance with fact to consider the insanity as a part of the history of the "profound disease of the brain." It is admitted that it has been deemed wrong by critics to consider these disorders as complications, when they are the result of the same cerebral disease which produces the insanity; but it is argued that it is not meant "by complications of insanity, complications of insanity *with other diseases*, but complications of the ordinary and predominant psychical changes with other groups of symptoms which, in the great majority of mental diseases, are altogether absent." What more cogent reason could exist for

[1] P. 223. [2] P. 247. [3] P. 252.

holding general paralysis to be a distinct form? Epilepsy is another so-called complication; and here we would also submit that the position should be reversed.

Nor is the object of the separation, their consideration more in detail, attained. All the remarks on general paralysis and epilepsy are compressed into some fourteen pages; and although a fair description is given of the former, the chapter cannot be held to be exhaustive in the face of the existing mass of literature on the two subjects. Moreover, there is confusion in terminology. In various parts of the book, general paralysis and paralytic dementia are indifferently used, the latter of which cannot be accepted as in any way correct. Taken as a whole, it cannot be conceded that Griesinger has added to our knowledge of the nature of mental disease.

When, however, we collate the introductory lecture of 1861, already spoken of, with the chapter on "the causes of insanity," and some passages scattered throughout the larger work, we see the prospect of good things to come. In the former, Professor Griesinger points to Ætiology as the best means of studying insanity; in the latter, he very ably directs attention to many specific groups or forms of mental disease in their actual relation to a morbid bodily condition. He demonstrates at page 166 that psychical causes act directly on the brain, or indirectly through the medium of a pathological process, which latter is by far the most frequent. "If," he says, "we consider the fact previously spoken of, that the emotions ordinarily disturb sympathetically the functions of the organs of circulation, respiration, digestion, and of blood formation, we will easily understand how these, when long continued, or very violent, must cause slight disorders of these functions; and those individuals are most easily affected in whom (owing to congenital or acquired disposition) emotions are most easily excited. Very frequently the cerebral disease only commences when, after long oscillations, some serious pathological change has gradually arisen in some other organ." The causes of insanity are divided into psychical, mixed, and physical. Drunkenness is held to be a mixed cause, as it not only produces great physical disturbance, but may also act through the medium of psychical changes, such as the excitement of brawls, remorse, or loss of self-respect; but as the drink is the common cause, we fail to understand why the headache and repentance are deemed primary causes, not merely connecting links. Further, it is held that, being preceded by sorrow, grief, or vexation, intemperance may act in combination.

Sexual excesses and onanism are regarded as having "a similar double injurious influence, in consequence of the mental excitement which is frequently associated therewith, and owing to the physical exhaustion which results."

There certainly does not exist any such full dissertation on the physical causes of insanity in any text-book as that given by Griesinger; and it is very suggestive how, notwithstanding his metaphysical classification, he clearly associates certain psychical phenomena with specific physical cause, how frequently he elucidates the existence of *positive* classes, and is even led on to adopt a pathological nomenclature.

This section is divided into—1. Insanity originating from other nervous diseases; 2. From acute febrile diseases; 3. From chronic constitutional diseases; 4. From chronic local disorders; 5. From certain diseases of the genital organs. Under the first head, apoplexy, in its relation to insanity, is shortly noticed, and is stated to be almost always symptomatized by dementia. Injuries of the head are associated with dementia, or dementia with mania; and in a quotation from Schläger, it is shown that such cases are very liable to violent outbursts of passion, general irascibility, a tendency to cerebral congestion, the suicidal impulse, and, less frequently, to over-estimate of self, prodigality, restlessness, and inquietude—an interestingly allied group of symptoms when considered in their relation to a specific cause.

A short but vivid description is given of "Hysterical Insanity" in its various phases, as it appears in the young and middle-aged; and so closely does the author ally hysteria with insanity, that he finds the necessity of speaking of the combination as "hysterical insanity," a forward step in the right direction. Perhaps the most interesting portion of this interesting chapter is the notice of acute febrile diseases as causes. At page 181, it is said: "Acute febrile diseases of different kinds occasionally give rise to an outbreak of insanity; the disorders which they occasion within the organism seem to be the only causes of the insanity. Typhus fever, intermittent fever, cholera, the acute exanthemata, pneumonia, and acute rheumatism, are the diseases in which it occurs most frequently;" and in the following pages the predominant mental symptoms associated with these diseases are noted, the result being the partial elimination of a class which might well be designated "Port-febrile Insanity."

In the third section, syphilis and tuberculosis are spoken of rather vaguely and briefly; the intimacy of their connection is admitted, but it is not allowed that the insanity which is developed from or accompanied by tuberculosis has been proved to present any peculiar character. Dr Clouston's paper on this subject[1] has evidently not fallen under the notice of the author. "Pellagrous Insanity" (another falling away from the psychical classification), is said to be evidenced by "a melancholic state, which predominates for a long time, but passes gradually into a state of torpor of all the mental powers, with muscular weakness, which greatly resembles general paralysis."

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[1] "The Connection between Tuberculosis and Insanity. By Dr J. S. Clouston." *Journal of Mental Science*, April 1863.

In section 4, heart disease is not held to be a frequent, efficient cause, but an atheromatous state of the arteries is considered to exert a much greater influence, as causing "disorders of the circulation of the most various kinds." A certain pathogenetic influence is attributed to emphysema as producing a melancholic state, but it is not insisted upon; nor are diseases of the abdominal organs held to be sufficiently proved causes of insanity. The same remark is made as to diseases of the kidney and the skin.

Under the fifth head, certain diseases of the genital organs, and the pathological influences generally which arise from them, are stated to have in both sexes an important action. But as we have already far exceeded our space, we must refer the reader to the volume, merely saying that, although the general tone of the observations is practical, still in many instances the consideration of most important bodily conditions is slurred over.

We can accept even this, the best part of the book, as a small instalment. It is a putting forth of the hand to grasp the really important truths of pathology. It is usefully suggestive of what might be done if the subject were worked out. It goes further than any existing text-book, and in this does good service; but we cannot help thinking that if Prof. Griesinger had paid more attention to British medico-psycholocial literature, this department of his subject would have been more fully elaborated. Throughout the work, references to English authors are few and far between,—in fact, are restricted to quotations from a few standard works. His acquaintance with our periodical literature seems very slight.

The concluding books, treating on the Pathological Anatomy and the Prognosis and Treatment of Mental Disease, are not marked by any novelty. The former contains a *resumé* of much of what is generally known and acknowledged, but many important observations by recent authors are not noticed. The latter re-treads well-trodden ground, and is characterized by the empiricism so common in works on insanity. The advice as to the course of treatment to be adopted is vague. Opium does good in some cases; it acts banefully in others. Baths are useful occasionally. Cupping has been known to do good. Tartar emetic is a doubtful remedy—and such like; and such like must continue to the end of this or any other chapter, unless physicians who make the study of insanity their specialty, tackle their subject with a strong determination to shake off the present effete system (?) of classification of mental disease.

To any one conversant with the treatment of such cases, how intensely feeble such a statement as follows sounds:—"In states of excitement, but especially of a maniacal kind, digitalis is employed." The general practitioner, inexperienced in the treatment of insanity, would, on this advice, be justified in applying this remedy in a case of puerperal mania, and would soon have an opportunity for pathological investigation. Till the actual bodily condition of the patient is alone taken as the foundation for the diagnosis *and* *nomenclature* of his disease, the psychical abnormalities being a mere adjuvant to diagnosis and nomenclature, the less written about therapeutics the better; it merely leads to gross error. In everyday asylum practice what fearful mistakes are seen: patients are sent in with shaved heads, their bowels racked with croton oil, their necks blistered, and their mouths salivated. And why? Because the general practitioner has no work to refer to which can assist him to differentiate between cases of insanity symptomatized by mania, for instance. This symptom is lumped, and whether it be of a sthenic or asthenic type, the directions for treatment apply equally. Nor need asylum physicians find fault as long as they themselves support such an *opprobrium medicinæ* as the existing fallacious, unphilosophical nomenclature: it leads to nothing but error; it is a monstrous bushel extinguishing the little light they have.

Before leaving the subject of therapeutics in this work, we would shortly call attention to one remark, as evidence of the old leaven still existing in Germany. At page 473 it is said, "The strong shower bath should scarcely be employed as a means of cure, *but rather as a means of punishment*, auxilliary to moral treatment. To this end it should only be continued for a short time, *and, if necessary, repeated during the day.*" The italics are our own.

This work is undoubtedly interesting, as showing the general principles of theory and practice held by the German school up to 1861. But should Prof. Griesinger put forth another edition (as, we are informed, is likely to be the case), we expect to find much of the old book expunged, and much new matter introduced. If he acts on the principles enunciated in the lecture of 1866, a most valuable—*the* most valuable—work on mental diseases may be anticipated from the hand of one who is able to concentrate on his subject the most extended experience, deep reading, mature deliberation, and a philosophical mind. It must be a grand thing for such a man *to have* written a book, to have weighed it, and then openly and freely to amend what he has written; and we cannot help thinking that the Sydenham Society would have done greater justice to Prof. Griesinger if they had delayed the translation of the work till the publication of the third edition. It can hardly be hoped that the society will translate the coming book, and therefore the great mass of readers will only be acquainted with this author up to the time when his opinions, theory, and practice, were as yet immatured. The six years which have intervened between the publication of this work and its translation, have, there is good reason to believe, materially changed the opinions of the author; and it is matter for regret that the cruder lucubration should be presented to the British physician, instead of the results of deliberation tempered by passing through the furnace of two editions.

Diseases of the Ovaries: their Diagnosis and Treatment. By T. Spencer Wells, F.R.C.S., etc. London: 1865: Vol. I.

This is only the first of two volumes on the subject chosen by the author as his field of fame. We reluctantly confess that it is rather a disappointing book, for it is not on diseases of the ovaries. It is simply a record of cases of ovariotomy. Its author might have called it "My Case Book," or "An Ovariotomist at his Work," then no one could have complained that the name was falsified by the contents. It will not do for the author to point to the coming volume; whatever may be its contents, this first volume is not on "Diseases of the Ovaries."

But this is very small and unedifying talk. The book, whatever be its name, is a monument to the memory of Spencer Wells, *ære perennius.* It is the plain and truth-like record of an achievement, the hope of accomplishing which has stimulated the ambition of many surgeons,—an achievement which many great surgeons never even dared to hope to make good; an achievement of which the greatest surgeon might be justly proud. In recent years the confraternity of nations has so increased, that all are, to a great extent, interested in the same problems, whether scientific or practical. This work settles for all the feasibility and the expediency of ovariotomy. It was not settled before—it was matter for keen discussion—it is settled now.

But did we say no more than we have just done, we might be justly accused of appearing to give Spencer Wells more than his due. Adhering to what we have said, we add, that the result attained, and with which our author's name is so grandly connected, has been the fruit of many labours—many struggles—well-directed, ill-directed, foolish and wise. The book before us is the philosophical as well as the actual conclusion of the war. The knife, not the sword, has been used. The facts are recorded. Can any one gainsay them? No. Can any one mistake the proper conclusion from them? We think our author has done well to avoid arguments. On this subject they have been very sophistical. They are now as vain when urged in favour as when urged against the operation.

We make no pretence of entering on the history of ovariotomy, but we shall state some of the facts most interesting to our own country. While we shall not claim for Great Britain precedence in scientific research or philosophical inquiry, we may surely go the length of pointing with pride to our practical achievements. If any nation can vie with us, it is perhaps America, which within a short space of time has sent us painless operations, and the cure of vesico-vaginal fistula. Ovariotomy is a glory of British Surgery. In saying this, we do not ignore the great doings of American Surgery, and we shall not enter upon them. Lizars boldly operated;

but had the operation rested upon him, it were long since extinct. Clay perseveringly continued not only to operate, but, in every other manner within his power, to urge the propriety of the proceeding on his fellow-countrymen. Without his untiring efforts, we do not believe the operation would have now stood in the position which it holds. But Clay did not convince the world—he did not even convince his fellow-countrymen. He may be said to have kept the question open for his professional colleagues, and, in some sense, his surgical descendants. Now have come Spencer Wells, Thomas Keith, Tyler Smith, Baker Brown, and a host of others. These have, through the medical journals, published the histories of their operations. Wells has now, in a handsome volume, given us 115 cases—a work, we might almost say, of supererogation—yet both justifiable and commendable.

Apart from our author, no one has contributed so much to this great progress of Surgery as Thomas Keith; and Scotland must always cherish his name for the honour he has brought to his native country. His cases and observations, brief, simple, lucid, surgeon-like, form a continued series as deserving of study as any that have appeared, and far more deserving than most. Of some of them a recent writer has said, that they "are one of the proudest records of surgical achievement, at once prudent and brilliant, captivating for its boldness, and convincing by its unanswerable success." But, as the majority of Keith's papers have adorned our own pages, we shall speak of their merits with some reserve. They reveal an amount of success quite unsurpassed, and as surprising as it is cheering to contemplate.

This operation has led to the correction of many erroneous views entertained by surgical pathologists, and we believe it is destined to correct still more. The operation is not old, and yet if we look at the directions formerly or originally given for its performance, they are really most antiquated. The proceedings were all conducted under erroneous views as to the risk of dangerous peritonitis. Surgeons now use every precaution against this dangerous consequence of the operation; but they know that the chances of its occurrence, if the operation is properly performed, are not nearly so great as they were once thought to be; and, still more, they know better in what direction the dangerous peritonitis will come to assail their patients. Formerly it was surgical interference with this membrane that was the chief terror,—wounding it, cooling it, handling it, sponging it, leaving ligatures between its folds, leaving foreign substances in the same. All these points are even now carefully considered, and, so far as may be, precautions are taken against their baneful influence. But the educated surgeon is now wiser, though, alas, he has still to say he is not ςοφος, only φιλοσοφος. He knows that to guard against all the old alarms is to be like the leveret half-hidden below the cabbage-leaf. The greatest dangers apprehended now are not those that can be seen; but though unseen and known chiefly only by their results, they are not the less real. They lurk in the constitution of the individual, in the age, the strength, the habits, the history. They are rife when drainage is foul, when rooms are filthy, when ventilation is bad; and modern researches show that probably the air contains germs whose influence is excessively pernicious and to be studiously obviated. A surgeon of thirty years' standing, or even less, finds it difficult to realize the change in our views of the surgical physiology or pathology of the peritoneum. In further illustrating this subject, we shall avail ourselves of the experience of Keith.

The use of anæsthesia in this operation is still universal. Clay has indeed, and not without many half assents from others, said that he sometimes thought patients would do better without chloroform, if they could only make up their minds to endure the pain, the prolonged agony of the operation. "If" is here an awful word, and we are so sure that patients will not adopt the alternative, that we do not discuss anæsthesia as a question; but it is necessary not to regard chloroform as the final anæsthetic. The prostration, the shock, the sickness, the vomiting which its prolonged administration sometimes produces, are great evils. Keith's later experience seems to show that the anæsthetic of Robert Ellis, or some modification of it, may with advantage be used to supersede the use of pure chloroform; and we recommend to Clay to make trial of this suggestion by Keith.

The heating of the room, and the swaddling of bowels extruded in the operation, are now to a great extent given up, though like cares are not neglected. An old surgeon would not believe in the survival of a patient whose peritoneum had been exposed, cooled, smeared with blood or with ovarian fluid, handled, sponged and sponged again, ligatured, clamped, to one-hundredth part of the extent now frequently, and we may, in a sense, say, harmlessly practised. Ovariotomists may be said to allow no fear of peritonitis to interfere with the perfect completion of their work—the breaking up of adhesions, the arrestment of hæmorrhage, the cleaning out of blood and serum from the peritoneal cavity.

The complete arrestment of hæmorrhage is one of the most difficult parts of the operation, and one to which Keith pays very great attention. He stops all considerable oozings before closing the parietal wound. He dislikes to run the risk of an intra-peritoneal blood-clot being formed: and his experience in the method of arresting this bleeding is remarkably instructive. He uses well-twisted silk; he generally ties and cuts short both ends; he may leave a dozen of such ligatures in the peritoneal cavity; and, after all, what are the results of his method? Nothing better is known. That these ligatures do no harm is to say little; they do great good. Of course it would be better for the patient if they were not required; but in most cases they are never again heard of. The same is, we believe, true of the great twine ligature put around the pedicle and left in the peritoneal cavity, according to the method of Tyler Smith. These facts have an important bearing on the much-vexed question of ligatures.

Keith has long had in use, in a simple way, the carbolic acid treatment, though certainly not according to the method of Lister. Probably there is not scope in ovariotomy for any such application of carbolic acid dressing as is used by the Glasgow Professor. But, in a modified way, Keith has derived, we believe, much advantage from the use of carbolic acid in his outward dressings. Keith uses silk ligatures for closing the great wound (which, however, he makes as small as possible) in the wall of the abdomen, and, as we have already said, he always uses antiseptic dressings. The result is that, as a rule, the silk behaves as well as silver; the wound heals without any suppuration or sprouting of granulations whatever.

But we must now stop. Only we shall tell old-fashioned surgeons that we have only disclosed half the contents of Pandora's box. The Gods have many incredible blessings still for them. What will they say to washing out the peritoneum now with warm, now with cooler water, now with other fluids; to leaving glass tubes or india-rubber Chassaignac pipes in the peritoneum? But we have perhaps already said enough.

Arsenal de la Chirurgie contemporaine; Description, Mode d'Emploi, et Appréciation des Appareils et Instruments en usage pour le Diagnostic et le Traitement des Maladies chirurgicales, l'Orthopédie, la Prothèse, les Opérations simples, générales, spéciales, et obstétricales. Par G. GAUJOT, Médecin-major, Professeur agrégé à l'Ecole impériale de Médecine militaire (Val-de-Grace), etc. Tome premier, avec environ 400 figures intercalées dans le texte. Pp. 772. 8vo. Paris: J.-B. Baillière et fils.

It is not easy to find a name for a work like this. Arsenal may perhaps convey a good idea of it to the military Frenchman; tool-chest or instrument-press might probably come nearer it to the more pacific Briton. However, we may grant that arsenal has become classic if we accept it as a translation of the Armamentarium Chirurgicum of Scultetus, of which work this larger one is the expansion.

We have no work in English of the kind; for in the two thick volumes (the first of which only has been published) will be found not only catalogues of instruments like that of Weiss—not only a complete manual of the apparatus of the orthopædist, as we have in Heather Bigg's Orthopraxy, but also a treatise on splints and bandages nearly as full as that of Hamilton, and a report on obstetrical weapons as elaborate as the catalogue of the conversazione.

The author of this most laborious work is a surgeon of very considerable eminence. Once a distinguished house-surgeon in the hospitals of Paris, he entered the army, but was soon withdrawn from active service on his talents being recognised, and placed on the staff of Val-de-Grace, from the comparative leisure of which retirement he is now giving forth this product of (we believe) ten years' labour.

No common qualities are necessary to one who should bring to a successful issue a task of such magnitude; industry, patience, and fairness were requisite, and M. Gaujot seems to possess them all. In the plan of this work large surgical experience and selective talent are unnecessary; the author does not profess to dictate as to merits and choice of apparatus or instruments, he merely describes all, and leaves the reader to choose.

It is very easy to criticize the method and arrangement of a work like this, but more difficult to suggest a better one. All classifications of such heterogeneous elements must be defective, the simpler and more natural are probably the least objectionable on the whole. The author's definitions of the two great divisions under which he classes all the contents of the surgeon's presses (*appareils*, *instruments*), are too long to quote, and yet not absolutely accurate or complete. *Appareils* divide themselves into three great classes—1. Mechanical agents of all kinds capable of being employed in the therapeutics of surgical diseases; 2. the various apparatus of the orthopædist; (3.) apparatus for repair of lost parts, not only of limbs, but eyes, mouth, teeth, etc. Instruments range themselves under four classes, according as they are required for the performance of operations—1. Simple; 2. general; 3. on special organs and regions; 4. obstetrical.

This first thick volume brings us down only to the end of the second head of the first division, so that probably the second volume will be still longer.

In some respects the writing of this work must have been a very heartless and wearisome task, and M. Gaujot must possess great patience. Thus, in the very first chapter, on "General Anæsthesia," it is quite obvious that the author's own sympathies are with the simple folded handkerchief as the best chloroform apparatus yet devised, and he honestly tells us that complicated apparatus give a false security; yet in twenty-six pages, illustrated by twenty-one woodcuts, he gives us one instrument after another, surpassing each other in hideousness and complexity.

In number, variety, and elaboration, the splints, boxes, and other hyponarthecic apparatus for the treatment of fractures of the lower extremity almost defy description. The main value of any attempt to catalogue them seems to be, to prevent, as far as may be, younger surgeons from re-inventing such useless and cumbrous apparatus. The glossocome of Dauvergne (figured at p. 226) and the polydactyle of Roux (p. 191), like a gigantic cribbage board, are exceedingly curious triumphs of mechanical ingenuity.

As is natural, French apparatus are most fully described, but those of other nations are not ignored. Thus, of thirteeen various methods of treating fractures of the patella, nine are French, two English, one American, and one German.

In laying down the first portion of the work, we feel that we have seen very little of the author himself, and have been able to judge of his own surgical principles only from a few scattered isolated hints. These, few as they are, leave the impression that he has emerged from his long labour of cataloguing surgical appliances, impressed by the belief that simplicity is to be aimed at, and that the fewer and less complicated the apparatus used, the better it is both for patient and surgeon.

We recommend this work most cordially to our surgical readers as a complete, cheap, and accessible book of reference on its own subject; and hope soon to congratulate its learned author on the completion of his task.

Die Frage über die Heilbarkeit der Lungenphthisen, Historisch, Pathologisch, und Therapeutisch untersucht. Von Dr JOH. BAPT. ULLERSPERGER, etc. Würzburg: 1867.

The Curability of Phthisis Historically, Pathologically, and Therapeutically investigated. By Dr JOH. BAPT. ULLERSPERGER.

COMPREHENSIVE and accurate, this work is a perfect mine of wealth for the student who wishes to hunt up the past history of any peculiar form of treatment, or of any would-be novel pathological theory; and yet, with all the author's care and untiring research, he is behind the age in one respect; for, in the history of the microscopic diagnosis of tubercular phthisis, we find a great deal about the difference between pus, mucus, and tubercular corpuscles, but not one word in regard to the expectoration of the pulmonary trabecular matter, which is one of the most certain, as well as the earliest recognisable symptoms of true phthisis, and which, as far as our experience goes, is perhaps the most infallible of all such symptoms, and yet one which does not preclude cicatrization and cure—temporary or permanent, which we know not,—though we are by no means disposed to regard every cicatrix in the lung as of tubercular origin; nor perhaps to trace the history of the cure of phthisis quite so far back as the age of Hippocrates. Even in the present day, a great part of the difficulty of recognising the curability of consumption consists in our doubt as to its proper diagnosis; for when so great a man and so accurate a stethoscopist as Dr Walsh says that, during a search carried on under peculiarly favourable circumstances, he has "in vain sought for a single specimen of cicatrized tubercular cavity," we can readily believe that the disappearance of gurgling râle and pectoriloquy cannot always signalize the cure of phthisis, and we may be permitted to doubt the proof of cured phthisis supposed to be afforded by pulmonary puckerings and cicatrices, which, if accepted, would actually go far to prove that very few of the inhabitants of the civilized portions of this world have passed through life without having been phthisical at one time or other—a manifest absurdity. But if the recognition of phthisis be difficult now, how impossible must it have been for Hippocrates himself—or for any of his successors for many hundred years. At this moment the whole pathology of tubercle is undergoing a thorough re-investigation,—a re-investigation which will certainly be productive of good; for nature is never carefully inquired at without showering benefits upon mankind through her catechist. Ullersperger's work, though not adapted to the neophyte, may be, as we have said, very useful to the more advanced student in aiding his historical inquiries.

Die Neigungen und Beugungen der Gebärmutter nach vorn und hinten. Klinisch bearbeitet, von Dr EDUARD MARTIN. Berlin. 1866.

Versions and Flexions of the Uterus forwards and backwards. Clinically Treated. By Dr EDWARD MARTIN.

THIS is a work of 233 closely printed octavo pages on an interesting subject, which culminated in professional interest several years ago. Since William Hunter in this country described a case of retroversion of the gravid uterus, the displacements of the uterus have been objects of much study, subjects of much authorship. Dr Edward Martin's book is, we believe, the completest and best treatise, take it as a whole, that has yet appeared. We wish we could add that little is left for his followers to do.

The best chapter in the work is that upon retroversion of the gravid uterus. But then this is exactly the department most susceptible of full and satisfactory treatment. Martin has a right to speak of this grave and often dangerous accident: he has recorded 41 cases of it. Even here he shows the great fault of his work, but less offensively than in other parts; for here facts bristle everywhere, while elsewhere it is difficult to distinguish fact from fiction. His fault is premature generalization, excessive theorizing. This chapter he calls "Backward inclination and bending of the pregnant uterus, in consequence of deficient contraction of the round ligaments of the uterus, or of excessive action of abdominal pressure in the first five months of pregnancy." Now Martin would have done well at least to keep his hypothesis out of the naming of his chapter. But his passion is to theorize; this gives the book its brightness in his own eyes. The above name and other passages show that Spiegelberg's well-known experiments on the round ligaments have made a profound impression on his imagination. Acting, these ligaments pull the fundus forwards. Not acting, or acting imperfectly, they are, by their misconduct, the cause of retroversion. But we ask—Where is the evidence of this sequence existing? We have indeed no evidence that they act at all in pregnancy. For our own part, we believe that, speaking mechanically, most uteri would grow in the usual way even were they absent altogether. We do not mean to contradict Martin's theory. That would be to commit the nearest error to Martin's. But we could easily point out other theories that would hold water as well as his. Indeed we gather from his chapter views as to causation much more probable than those he dignifies with a position in its title.

Of Martin's 41 cases of retroversion of the gravid uterus, 10 only were retroversions proper, 31 were retroflexions. The different degrees of hardness of the body of the organ are described; the varying position of the external orifice of the urethra; the different conditions of the urine and of the bladder; the occurrence of sudden and of gradual retroversion; the influence of pelvic conformation; the influence of retroversion or retroflexion existing before conception; the period of pregnancy at which surgical interference was required; the recurrence of the affection in successive pregnancies; the symptoms; the diagnosis; the prophylaxis; the treatment; the liability to relapse.

We can say that the other chapters of the work are as good as those of any other author. But that is saying little; and we think authors would do well to say little also, and to treat still less. If they do treat, they should sedulously cultivate recollection of the good therapeutic axiom—at least to do no harm. What have women not had to endure and lament from the treatment of versions and flexions of the unimpregnated uterus? Martin's theories are so fanciful and withal so confidently laid down, that they produce, in a reflex manner, want of confidence in his therapeutics. We might say more on this head, but, out of deference to the book, we refrain. Only we shall justify what we have said by giving the kinds of displacement of the unimpregnated uterus which Martin describes, and to each of which he solemnly attaches a diagnosis and treatment.

Anteversion and anteflexion: 1. From abnormal development of the anterior and posterior wall; 2. From deficient involution of the recently impregnated uterus, especially of the placental insertion when situated in the posterior wall; 3. From shrinking of one or both round ligaments, and from exudations on the anterior peritoneal covering of the uterus; 4. From shrinking of the sacro-uterine ligaments, and from exudations on their peritoneal coverings; 5. From pressure on the posterior wall of the uterus.

Retroversion and retroflexion: 1. From deficient development or shrinking of the posterior wall; 2. From deficient involution after delivery; 3. From shrinking of the ligamenta pubo-vesico-uterina; 4. From traction by a ligament of the ovary; 5. From pressure exerted by a fibrous tumour of the anterior wall, or by an ovarian tumour.

We strongly recommend the work to all obstetrical students.

Practical Dissections. By RICHARD M. HODGES, M.D., formerly Demonstrator of Anatomy in the Medical Department of Harvard University. Second edition, thoroughly revised; 12mo, pp. 286. Philadelphia: Henry C. Lea: 1867.

THIS useful little work is evidently from the pen of a careful practical anatomist, and will be found a concise manual for the dissecting-room.

As in some of the German schools, the body is, by our author, divided into three great regions:—that of the head and neck,—that of the upper extremity, thorax, and back,—and that of the abdomen and lower extremity. The general rules given by him to be observed in dissecting are both advantageous to the student and of practical utility to the surgeon. The style of the writer is accurate and clear; the index to his book is carefully constructed; and the typography of the whole is excellent.

Dr Hodges is perhaps in error in attaching too little importance to the *dissection* of the fasciæ, both superficial and deep; however, with his *description* of the pelvic fascia, which is both full and exact, no fault can be found. He describes concisely and well the arrangement of the arachnoid membranes, gives a very good description of the anatomy of the eye, and explains accurately Wilson's and Guthrie's fasciculi of the compressor urethra.

The following extract may afford a fair specimen of the merits of the author's treatise generally:—

> "The *rectus muscle*, broad above and narrow below, arises by a thick tendon from the crest of the os pubis; becoming thinner as it grows broader, it is inserted into the cartilages of the fifth, sixth, and seventh ribs; it is separated from its fellow by an interval, formed by the aggregation of the fibres of the tendons of the abdominal muscles of the two sides, which constitutes the linea alba. Two or three tendinous intersections, sometimes complete, at others only partial, cross the rectus in irregular directions; they are called *lineæ transversæ*, and serve to keep the muscle flat during its contractions, since without them its broad insertion and narrow origin would give it a tendency to roll into a cone longitudinally. The rectus muscle is occasionally inserted as high as the fourth, or even third rib. Sometimes there may be found an abnormal muscle upon the sternum, which appears, physiologically at least, to be a continuation of this muscle; it is called the *rectus sternalis*, and is described as being occasionally connected with the sterno-mastoid, instances being recorded where the sterno-mastoid and rectus were one continuous

muscle. This occasional slip, and the high insertion of the rectus, is looked upon as corresponding with the long rectus of the lower orders of animals. . . . . . . In front of the upper half of the rectus muscle expands the aponeurotic tendon of the external oblique, and the anterior layer of that of the internal oblique; behind the upper half are the posterior layer of the tendon of the internal oblique, and the whole of that of the transversalis. Below the umbilicus all the tendons pass in front, while behind, the rectus is separated from the viscera only by the transversalis fascia and the peritoneum. The lower edge of the tendons forming the posterior sheath of the upper half of the rectus muscle assumes a crescentic shape, and is called the *semilunar fold of Douglas;* the space below this fold, between the peritoneum and the muscle, Retzius has described as a *pre-peritoneal cavity,* having proper walls, formed by the transversalis fascia, and destined to accommodate the bladder in its changes of volume, and enabling the recti muscles to act more directly upon that viscus in emptying it of its contents. Below the umbilicus the linea alba becomes more tendinous than above that point, and the peritoneum is manifestly less closely connected with the abdominal walls."—P. 167.

The student will remark that after the word "rectus," on the eleventh lowest line of this extract, ought to have followed the qualifying words, "at the lowest fourth of its course;" farther, that a parallel mistake in the use of the word "half" occurs thrice in the course of the preceding and the following sentences.

Homœopathy and Hydropathy impartially appreciated. By EDWIN LEE, M.D. London, 1866. 4th Edition.

THE circumstance that this little book has run through four editions seems to show that it supplies a want. It contains an interesting and tolerably accurate account of homœopathy as it was, and of hydropathy, with an instructive appendix upon the influence of the mind on the body. Some of the illustrative anecdotes are not only amusing, but tend to show how the infinitesimals might sometimes have proved active remedies without any improper tampering with their ingredients by the prescriber.

"A gentleman," says Dr Noble, "consulted me for sleepless nights. I thought it advisable to commence with a free action of the bowels, and prescribed pills composed of eight grains of colocynth and two of calomel, to be taken at bedtime. When I next saw the patient, he told me the pills had given him an excellent night, for he had slept beautifully. "But," said I, "did they not purge you?—they were intended to do so." "Why," he rejoined, "as I had consulted you for sleepless nights, and as the pills were to be taken at bedtime, I thought they were to make me sleep; and I did sleep. I was not purged at all." Here, again, is precisely the converse. "A seaman suffered from attacks of constipation; the most powerful medicines were required for his relief. On a fifth attack, he took two grains of bread pill every seven minutes, much anxiety being expressed against an overdose. He soon became violently sick, as had been expected (predicted), and the cure was complete." Here we have in the one case the mere imagination converting a perfectly inert pill into an active purge; while in the other a similar effort of the mind completely prevented the action of a powerful purge, and transformed it into a sleeping draught—a novel illustration of the co-relation of forces. Last year we had a great deal of discussion in regard tot he influence of prayer upon plagues; but the Sandwich Islanders, it seems, have long since settled that matter in a most conclusive, if not—to the victim at least—a very satisfactory manner; for there a sect arrogate to themselves the power of praying people to death. Whoever incurs their displeasure receives notice that the homicidal litany is about to commence; and such is the influence of the imagination that the very notice is sufficient to produce the effect.

Part Third.

PERISCOPE.

THERAPEUTICS.

DR FRASER ON THE CALABAR BEAN.

THE following are the conclusions at which Dr Fraser has arrived as the result of his elaborate investigations:—

A. *Action through the Blood.*—1. Physostigma has proved fatal to every animal hitherto examined, with the exception of the Esere moth. In mammals and birds, death is most rapidly caused when the poison is injected into the circulation, or when it is brought into contact with a wounded surface. It follows nearly as quickly when Calabar bean is introduced into a serous cavity; much more slowly when it is exhibited by the mucous membrane of the digestive system. In rabbits, death has been caused by its application to the Schneiderian, the auditory or the conjunctival mucous membrane. The skin of frogs resists the poison for a long time; but, if it be applied for a considerable period, and with proper precautions, distinct evidence of absorption may be obtained, though death has never been caused by such application.

2. The contact of the extract of Calabar bean with the gastric juice of a dog, for twenty-four hours and at a temperature a little above 95° F., did not, in the slightest degree, modify the energy of the poison.

3. A large dose given to a mammal or bird, rapidly affects the cardiac contractions, and then paralyses the heart. The respiratory movements are quickly stopped, but the symptoms and post-mortem appearances are those of syncope. Such a dose, injected into the abdominal cavity of a frog, affects nearly simultaneously the heart and spinal cord, and very rapidly destroys the vitality of both organs. In this case the motor nerves are only slightly or not at all affected, and may retain their conductivity for about thirty hours. Evidence of the vitality of the afferent nerves may be obtained as long as the retained vitality of the spinal cord permits of its diastaltic function being examined.

4. In mammals and birds, an average dose produces symptoms of asphyxia. When administered to frogs, a similar dose impairs the function of the spinal cord, and diminishes the rates of the cardiac contractions and of the respiratory movements; and, soon after, the latter cease. In periods varying from one

and a half to four hours afterwards, the motor nerves are paralyzed; this paralysis implicating their endorgans first, and their trunks afterwards. From this it must not be inferred that the nerve is paralyzed by a centripetal progression of the poison; the only fact demonstrated being that a direct ratio exists between, on the one hand, subdivision of nerve substance, facilitating contact of the poison, and, on the other, rapidity of paralyzing effect. Indeed, division of the nerve trunk, previous to the administration of Calabar bean, delayed the paralysis of the endorgans. The afferent nerves retain their activity as long, at least, as the functions of the spinal cord are not lost. The spinal cord and the motor nerves are generally paralyzed at about the same time.

5. When a small, but still fatal, dose of Calabar bean is administered to a frog, the effects are the same as those in the previous conclusion, until they arrive at the stage of paralysis of the motor nerves; after this, an interval of several hours may elapse before the functions of the spinal cord are completely suspended. During this interval the *tactile* sensibility of the afferent nerves is increased; so that, if the ischiadic artery and vein of one limb have been tied before the exhibition of the poison, a slight touch of the skin in the poisoned region, which before the administration of the poison caused no effect, will now produce faint twitches of the limb whose vessels are tied; while an ordinary excitant, such as sulphuric acid, will show everywhere a marked diminution in the diastaltic activity, as measured by the métronome.

6. *With a still smaller dose, a frog may have its cardiac contractions reduced by from seventy to eight per minute, its respiratory movements completely stopped, and the endorgans of its motor nerves paralyzed, and yet afterwards completely recover.* This has occurred when two grains of extract were administered to a frog weighing 730 grains.

7. In frogs, the voluntary muscles are unaffected by the poison, and may continue to respond to galvanic stimulation during three or four days after its administration. The contrast between this and the effect of Calabar bean on the motor nerves, may be well shown by ligaturing the ischiadic vessels of one limb before injecting the poison. If, when strong stimulation causes no reflex movement, the two gastrocnemii muscles, with their attached nerves, be so placed that an interrupted current, from one Daniell's cell and Du Bois Reymond's induction apparatus, may be transmitted simultaneously through either both muscles or both nerve trunks, it will be found in the case of the muscles that, when the secondary coil is slowly advanced, contractions will occur with the same current in both muscles, or with a weaker current in the case of the poisoned than in that of the non-poisoned one, this varying with the length of time which has elapsed since the limb was deprived of blood; when the current is transmitted through both nerves, contractions will be produced simultaneously in both muscles, or with a weaker current in the non-poisoned one, or contractions will occur in the non-poisoned muscle only, this also varying with the length of time that may have elapsed since the exhibition of the poison.

8. In mammals and birds, the voluntary muscles are affected in a very remarkable manner. At an early stage of the poisoning, faint twitches occur, which gradually extend over the body, and, at the same time, increase in vigour so as to interfere with the respiratory movements. Shortly before death, they again become mere successive twitches, often requiring the use of the hand to discover their existence. After death, if a muscular surface be exposed, these twitches will still be observed, involving usually different muscular fasciculi at different times, rarely the whole of a muscle at once; and in mammals they may persist for more than thirty minutes after death. They are caused by a direct effect of physostigma on the muscular substance. This is shown by their continuing after paralysis of the motor nerves, by their persisting in a muscle cut out of the body, and by their non-occurrence in parts that have been separated by ligature from the circulation.

9. In mammals and birds, when the dose is large, the heart's action is

rapidly made slower and then stopped. In dogs, it may diminish to one-half in three minutes, and cease in ten. In frogs, also, a large dose, injected into the abdominal cavity, causes rapid and complete cardiac paralysis. A smaller dose causes either a gradual cessation, followed by a renewal at a diminished rate, or a gradual fall from sixty or seventy to four or six beats per minute, followed by a gradual return to a diminished rate of from eight to twenty per minute. At this stage, and for many hours afterwards, the only signs of vitality are this diminished cardiac action and the power of the voluntary muscles to respond to galvanic and other stimulation. In the frog, where alone these last phenomena have been observed, the heart may continue so to contract for three or even five days, provided the temperature of the apartment be as low as 50° F. After stoppage, galvanism may sometimes cause a renewal of rhythmical contractions; but this can rarely be done, and unrhythmical and partial contractions can alone be excited. Cessation of the heart's contractions occurs in diastole, with all the chambers full.

10. The pneumo-gastric nerves retain their inhibitory power over the heart during the whole time from the diminution to the partial recovery of its action. Soon after this, however, they are paralyzed; and this occurs at nearly the same time as the affection of the motor nerves.

11. Division of the pneumo-gastric nerves, or their paralysis by curare, or destruction of the medulla oblongata or spinalis, does not protect the heart from the action of physostigma.

12. The lymphatic hearts of frogs poisoned by Calabar bean soon cease to contract.

13. In rabbits, a large dose paralyzes the cervical sympathetic nerves before the death of the animal. A smaller fatal dose merely diminishes their activity.

14. Before the stoppage of the heart, proofs may be obtained of the vitality of its sympathetic ganglia; but, as striped muscle is not affected by Calabar bean conveyed by the blood, we are obliged to infer from the symptoms respectively produced, that the activity of the cardiac sympathetic system is probably destroyed by a large dose, and lessened by a smaller one.

15. The animal temperature, both external and internal, has been invariably observed to rise in rabbits and dogs, but only slightly and for a short period; after which it slowly falls.

16. The condition of the capillary circulation was examined in the web of the frog. Soon after the exhibition of the poison, the smaller arteries and veins contracted slightly; but, after a short interval, this contraction was succeeded by a rapid and permanent dilatation, in which the calibre of the vessels was considerably above their maximum previous to the poisoning. This capillary dilatation appears to occur all over the body, as is shown by a peculiar blue coloration of the voluntary muscles and of the heart, a similar coloration of the serous and fibro-serous tissues, and a congestion of the blood-vessels in the conjunctiva and iris. This change also occurs, in a less marked manner, in birds and mammals.

17. The general results of experiments in which the arterial and venous tensions were examined were, that the arterial tension first diminished slightly, immediately after the administration of the poison, then gradually increased until it reached its maximum, when the number of cardiac contractions had diminished to at least one-half, and afterwards rapidly fell; and that the venous tension began to increase immediately after the administration, continued doing so until it slowly reached its maximum, when the arterial tension had considerably diminished, and then fell, though more gradually than the tension of the arterial system. The number of the cardiac contractions, when the venous tension had attained its maximum, was about one-third of the average before the poisoning; the respirations were rather less frequent than before, and the temperature had risen a few tenths of a degree.

18. Physostigma causes extreme diffusion in the pigment-cells of the frog's

skin, and thus a very marked change occurs in the colour of the animal during the progress of the symptoms.

19. In dogs, the peristaltic action of the intestines is usually destroyed at death; it may, however, continue a short time afterwards. In rabbits, the intestinal movements are frequently increased in activity before death, and generally continue for a considerable time afterwards.

20. The pupil contracts in all cases of rapid poisoning in mammalians and birds. The contraction may, however, be slight and of short duration; and dilatation may then be observed during the greater portion of the experiment, especially if the dose be a small one. Contraction of the pupil is produced in frogs also.

21. Calabar bean acts as an excitant of the secretory system; increasing the action of the alimentary mucous, of the lachrymal, and of the salivary glands.

22. In the frog, the symptoms of poisoning are not materially altered by removal of the brain, or by division of the cervical portion of the spinal cord.

23. Artificial respiration does not prevent death, in mammals, after the exhibition of a poisonous dose. This is a necessary result of the effects of physostigma on both the cerebro-spinal and sympathetic systems.

24. Congestion of internal organs occasionally occurs; but this is by no means an invariable consequence of a fatal dose.

25. The blood is generally dark after death, but becomes arterialized on exposure to the air; its respiratory capabilities are unaltered; it often clots loosely and imperfectly; and, when examined with the spectroscope, the bands of scarlet cruorine are found unchanged. In the rabbit and dog, a microscopic examination demonstrates an invariable change in the coloured corpuscles, which have their outlines distinctly crenated. This change is not caused in the blood of birds or amphibia. The white corpuscles remain unaltered.

B. *Topical Effects.*—1. When the poison is applied to the surface of a frog's brain, no effect is produced; but when it is brought into contact with the spinal cord, a few twitches occur in the extremities, followed by paralysis of the portion of cord acted upon.

2. When physostigma is applied to a mixed nerve-trunk, in a concentrated form and with proper precautions to prevent absorption by neighbouring parts, first the afferent nerve-fibres are paralyzed, and afterwards the efferent.

3. Topical application destroys the contractility of striped and of unstriped muscular fibre. The heart's action is stopped by repeated application to its external surface or to the pericardium. If a small quantity be injected into one of its chambers, paralysis nearly immediately follows.

4. The blood-vessels are dilated when a solution is applied to the web of the frog's foot.

5. The effects of the application of Calabar bean to the eyeball are a somewhat painful sensation of tension in the ciliary region, contraction of the pupil, myopia and astigmatism; with, frequently, congestion of the conjunctival vessels, pain in the supra-orbital region, and twitches of the orbicularis palpebrarum muscle.—*Trans. Roy. Soc. of Edinburgh* 1867.

SURGERY.

TEMPORARY BINOCULAR MYDRIASIS RESULTING FROM AN INJURY OF THE NECK. PROBABLE INCOMPLETE DISLOCATION OF THE SIXTH CERVICAL VERTEBRA ON THE SEVENTH. BY M. PAUL DAUVE.

"V., of the 9th Dragoons, entered the military hospital of Versailles on the 30th of April 1867, with a note, giving as a diagnosis, *Luxation of the sixth cervical vertebra on the seventh.* The patient, who had fallen down the barrack stair, believed he had broken his neck, and was certain that he had heard it crack. He had not lost consciousness, and had walked to the hospital. No symptoms of paralysis either of limbs or sphincters existed. The patient walked with his head bent forwards, and the face slightly inclined to the left. He could not raise his head unaided, but it was easy, without any violent effort, to restore it to its proper position. The spinous process of the seventh cervical vertebra was very prominent, and its neighbourhood was red and swollen. There was no abnormal mobility, but pressure caused acute pain, extending to the three last cervical vertebræ. The distance separating the spinous processes of the sixth and seventh vertebræ was increased, especially during the forced flexion of the head, and the spine of the sixth was displaced to the right. As it was easy to restore the head to its normal position, it was obvious the dislocation was not complete. The absence of crepitus and mobility prevented the diagnosis of fracture of the spines or laminæ. I diagnosed an incomplete luxation of the sixth on the seventh cervical vertebra. This is the position where such luxations are most frequent, as proved by the statistics of M. Richet, who, out of forty cases, found five between the fourth and fifth cervical; eleven between the fifth and sixth; twelve between the sixth and seventh; and *two* only between the seventh and first dorsal; none in the upper dorsal region, and the remainder in the lower dorsal and the lumbar region.

"The only indication to be followed in the treatment was, after subduing the pain and swelling by twenty leeches, to fix the head in a vertical position by suitable pillows and bandages.

"Some curious nervous phenomena were present, which may be briefly noted. V. felt, between the shoulders, over the shoulders, and in the subclavicular regions down to the nipples, a painful "roasting sensation." Sensation was exaggerated over all this region; there was hyperæsthesia, and a feeble redness of the skin. The vision furnished the second interesting symptom. Prior to the accident it was normal, while since the fall he has confusion, crowding, and tinting of near objects: in a word, all the symptoms resulting from dilatation by atropine. I was struck by the extreme dilatation of both pupils, and the patient informed me that before the accident there was nothing remarkable about his eyes. It is hardly necessary to say that he had not been subjected to any opthalmoscopic examination, or used belladonna in any form prior to the accident. In the absence of any contusion of the scalp which might explain the mydriasis as a result of cerebral contusion, and after the patient had assured me that he had no injury to his head, I thought at last that the mydriasis must be due to an excitement of the cilio-spinal centre (described by Budge and Waller). . . . . The mydriasis was not increased by darkness or by closing the lids. A strong light caused only a very feeble contraction. I could not procure any Calabar bean. As vision improved in a few hours, and with the aid of convex glasses, I dismissed the idea of amaurosis." . . . . After a discussion of the probable cause of the mydriasis, which is too long to quote, M. Dauve gives it as his opinion that the most probable explanation is, that a partial laceration or injury of the sympathetic in the neck, caused a temporary stimulation of the radiating fibres of the iris.

The mydriasis had entirely disappeared forty-eight hours after the accident, and in two months the patient was perfectly well. No ophthalmoscopic examination could be made till long after the mydriasis had entirely disappeared, and nothing abnormal was then to be seen.—*Gazette des Hôpitaux*, No. 91.

"DERMO-SYNOVITE ULCÉREUCE" OF THE CALLOSITIES OF THE SOLE, CALLED THE "PERFORATING DISEASE OF THE SOLE." REMARKS ON THE PROGRESS AND CAUSATION OF THE DISEASE, SUGGESTED BY THE CASE OF A PATIENT. BY M. GOSSELIN, AT LA PITIÉ.

THIS patient gives me the opportunity of making some remarks on a curious affection, the mechanism of which seems to me to have not been as yet sufficiently brought out. He is fifty years old, a dyer, and apparently in vigorous health. He tells us that for many years he has been annoyed by callosities under the great toe of each foot. Six months ago the inconvenience became actual pain, at the same time a small opening formed in the centre of the callosity, from which pus escaped. This opening enlarged, but as the pain was quite supportable, the patient continued to go about as usual. A sudden increase of inflammation at last forced him to seek relief.

Present state.—On the left foot, which is least affected, we find a small solution of continuity on the under surface of the great toe. All round it a considerable induration both of cuticle and true skin is to be felt. On excising with curved scissors all the indurated edges, an ulcerated surface, gray in colour, and moist with serum rather than pus, was exposed. The probe failed to discover either separation of the soft parts in the neighbourhood, or bare bone. No crepitation in the joint. In the right foot the same lesions were observed, but more severe, corresponding, so to speak, to a more advanced stage in the disease. In fact, at the bottom of the ulcer, we found a phalanx denuded of periosteum. The great toe also, which presents an erythematous blush, is uniformly swollen, and has the cylindrical shape so characteristic of affections of bones and (especially) joints; we were thus not surprised to find, on moving the toe, that crepitus and those lateral movements which indicate the destruction of the diarthrodial cartilages and relaxation of ligaments, phenomena which always accompany suppuration of the smaller joints.

What name is to be given to this disease? For a long time there was no special notice of it in surgical treatises. It was included under caries, or white swelling. Only lately has the difference which exists, as well in prognosis and treatment as in causation, been clearly made out. In 1837, Lenoir published in the *Presse Médicale* a work on the *Subcutaneous Mucous Bursæ of the Sole of the Foot and their Inflammations.* He described these normal subcutaneous synovial bursæ, the suppuration of which may spread to the neighbouring bones and joints; and, without putting it categorically, expressed the probability that the accidental synovial bursæ developed under corns or callosities might inflame in the same manner. Since his day writers on surgical anatomy have not failed to notice, besides the normal synovial bursæ of Lenoir, the accidental bursæ developed under corns. More lately, in 1852, the *Gazette des Hôpitaux* published a lecture by M. Nélaton on a singular affection of the bones of the foot—*singular* in this respect that, notwithstanding the gravity of the lesion, the denudation of a greater or less portion of the skeleton of the foot; rest alone, aided by ordinary care, sufficed often to obtain an apparent but short-lived cure.

About the same time (1852) M. Vesigne (d'Abbeville) published four cases of this disease. He gave it the name of *perforating disease of the sole*, wishing thus to indicate its most salient character, which is, to destroy more and more deeply until its progress is stopped by suitable treatment. This name has, since then, been generally adopted, especially since the publication of the justly celebrated theses of Drs Leplat and Delsol. Cannot a better be found? At least we should try; for the expression perforating disease, for one thing, seems to imply an ulceration through and through the foot which does not occur; and, on the other, does not tell us either the anatomical origin or the nature of the disease.

This may justify a rapid glance at the characters and varieties of this disease.

When seen sufficiently early, a simple inflammation, having its seat between the cuticle and the true skin, is first noticed; the skin is thickened, and under the cuticle there may be found a little of a sero-purulent fluid. This is the first phase of the affection.

But soon, if the patient continues to walk about, the inflammation makes progress and reaches the normal or accidental synovial bursa below the skin; this becomes the seat of a true acute dropsy; it suppurates, and discharges by an orifice which remains fistulous. This is the second stage.

If still the patient neglects the case, and continues to walk about, the inflammation becomes ulcerative as well as suppurative. A portion of the thickened skin gives way, the synovial membrane thickens and protrudes as a fungus, is partly destroyed, and instead of a fistula, it becomes an ulcer both of the skin and synovial membrane. The patient still persisting in his neglect, the disease spreads to the deeper parts, involves the joints and the periosteum, which it partially destroys.

Briefly, the clinical characters of the disease are as follows:—

1. The obstinacy and progressive advance of the disease so long as the patient keeps going about.
2. The absence of pain, except during the comparatively rare acute inflammatory attacks.
3. The rapid cure, simply by rest in the horizontal posture, and careful dressing, even after the denudation of the phalanges and partial affection of the joints.
4. Its rapid return in those who expose themselves afresh to the original causes of the disease.

It does not seem to depend on, or to be related to, either scrofula, scurvy, or syphilis; it attacks patients after 45 or 50 years of age, and we have generally observed that they have been of intemperate habits.—*Gazette des Hôpitaux*, *No.* 93.

IMPERFORATE ŒSOPHAGUS.

M. **Blondeau** gave some details of a case of imperforate œsophagus, which he had seen in private along with M. Tarnier, at the meeting of the Society of Medicine of 21st June 1867. The condition had been diagnosed during life. The infant sucked well, and even swallowed, but in a few minutes regurgitation took place.

At the post-mortem examination, the œsophagus was found to end in a cul-de-sac, opposite the bifurcation of the bronchi. Some fibres were continuous with the bronchi, and it opened into the respiratory passages.—*Gazette des Hopitaux*, 1867, *No.* 114.

LOGIC AND ASTROLOGY *v.* CONTAGION AND SANITATION.

During the Plague of Milan in 1630, when the authorities of the city, by the advice of the Medical Board of Health, were enforcing sanitary measures, the chief opposition they met with arose from the indolence and ignorance of the populace on the one hand, and the prejudices of the old school of philosophers on the other. In the admirable account of this frightful visitation, given in Manzoni's celebrated novel, one of the latter is represented arguing as follows:

"*In rerum natura*," said Don Ferrante, "there exist only two kinds of things—substances and accidents; and if I can show that contagion is neither the one nor the other, I shall have proved that it has no existence—that it is a chimera. Well, then, substances are either spiritual or material. That contagion is a spiritual substance is an absurdity which no one would dream of maintaining, and of which it is therefore unnecessary to speak. Material substances are either simple or compound. Now, contagion is not a simple substance. This can be demonstrated in four words. It is not an aerial substance, because, were it so, instead of passing from one body to another, it would ascend at once to its proper sphere. It is not aqueous, for, if it were, it would moisten what it touched, and the wind would dry it up. It is not igneous, or it would burn; it is not earthy, or it would be visible. Neither is it a compound substance, because it would, at any rate, be perceived by the sight or the touch. But who has beheld contagion? who has handled it? It remains to inquire whether it can be regarded as an accident. Still less than as a substance. The doctors tell us that it is communicated from one body to another; for this is their great point, this is their pretext for so many nonsensical, by way of sanitary, directions. Now, if contagion be an accident, it must be an accident *transferred*,—two terms which are mutually incompatible, since nothing in all philosophy is more clear, more luminously manifest, than this, that an accident cannot pass from one subject to another. But if, in order to avoid Scylla on this side, they have recourse to the assertion that contagion is an accident *produced*, they steer straight into Charybdis; for if it is produced, it is not communicated, it is not diffused, as they continually insist that it is. These principles acknowledged, what use is there in their coming to us and lecturing about *vibices*, and *exanthemata*, and *carbuncles*, and this thing and that thing?"

"All stuff these," a listener once exclaimed at this point. "No, no," hastily replied Don Ferrante, "I don't say that; science is science; only one should know how to apply it. Vibices, exanthemata, carbuncles, parotid tumours, violet-coloured buboes, boils which blacken at the top, are all respectable expressions, which have their own true and proper meaning; but what I contend is, that they have nothing to do with the question under discussion. Who denies that such things may be, nay, that such things are? But it is their *cause* that we wish to know.

"Their true cause exists, only too surely, as even those who uphold that other fantastical notion of contagion are constrained to own. Let them deny for a moment, if they can, the fatal conjunction of Saturn and Jupiter. And when did ever any one hear of planetary influence spreading by contagion? Will these gentlemen deny that there is such influence? Perhaps they will deny that there are stars at all, or they will assert that they are stuck up aloft there to do nothing, like so many pins' heads in a pincushion! But what confounds me is the inconsistency of these doctors. They grant that we are at this moment under a planetary conjunction of so malignant a character, and yet they come to us with earnest visages and say, 'Don't touch this, don't touch that, and you are safe!' as if this avoiding of material contact with terrestrial substances could prevent the virtual operation of the celestial bodies! And all the fuss that they make about burning old clothes and rags to check the progress of the distemper! Poor creatures; can you burn Jupiter? Can you burn Saturn?"

His fretus; relying upon these cogent arguments, he used no precautions against the pestilence; it attacked him; he took to his bed, and, like a hero of Metastasio, died accusing the stars.

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